TRANSPORTATION SYSTEM PLAN

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Photo Credit: James Gerhardt

CITY OF ROGUE RIVER

TRANSPORTATION SYSTEM PLAN

2020-2021

Prepared For:

City of Rogue River
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I. INTRODUCTION

PROJECT DESCRIPTION

The City of Rogue River received a State of Oregon grant to prepare a Transportation System Plan (TSP). The TSP is a 20-year multi-modal plan that identifies a system of transportation facilities and services that meets local transportation needs and services. The TSP is consistent with the Oregon Transportation Plan (OTP) and the relevant policies of the Oregon Transportation Planning Rule. An important element of the TSP is a list of necessary transportation facility improvements with estimated project costs, and time frame for completion.

PROJECT AREA

The TSP project area includes all lands within Rogue River's Urban Growth Boundary (UGB). The area of Rogue River's UGB is approximately two times larger than the area within the city limits. The estimated population of Rogue River is 2,250. Since a construction moratorium from 1992 through 1998, Rogue River has witnessed an increased interest in new development within the city limits and the UGB.

PROJECT OBJECTIVES

The purpose of a TSP is to develop a transportation system that serves the needs of residents, motorists, pedestrians, and bicyclists. Critical objectives to the project are to:

- Provide for a safe and efficient transportation system based on existing and future land uses
- Prioritize improvement projects for existing transportation facilities
- Establish a document that is simple and easy to understand for developers and the community
- Include a safe routes to school component that provides a plan to construct missing portions of bicycle and pedestrian infrastructure
- Comply with applicable state and local laws, rules, and regulations

The TSP includes implementation tools resulting in a street pattern and internal circulation network that serves the needs of residents, pedestrians, bicyclists, and motorists and will guide land use decisions. This street and internal circulation pattern must strive to enhance and/or create direct and convenient routes for pedestrians and bicyclists to neighborhood destinations. In addition, the TSP includes street standards that serve to make streets more livable and safe for pedestrians and bicyclists. Key considerations are the enhancement of neighborhood integrity, traffic circulation, safety, improvement costs and the development of a connected multi-modal transportation network.

Finally, the plan serves as an instrument for making land use and transportation investment decisions.

PLANNING PROCESS

A well-conceived plan is the result of a planning process that follows a series of sequential tasks. For the Rogue River TSP, the planning process consisted of the following primary tasks:

1. Design and Implement a Public Involvement Program/Review Existing Plans, Policies, and Standards
2. Inventory Existing Transportation System
3. Identify Transportation System Needs
4. Develop and Evaluate Transportation System Alternatives
5. Produce Transportation System Plan
6. Draft Implementing Policies and Ordinances
7. Develop Transportation Financing Program

PUBLIC INVOLVEMENT PROCESS

Public involvement is an important component of the planning process. It provides useful technical and community input which assists in determining community needs and desires while establishing a program for future planning. Public involvement provides opportunities for community leaders and citizenry to become knowledgeable and involved in the future development of the city, leading to broad-based community review that aids in the acceptance of the plan in later stages of the planning process. Building consensus and giving ownership of the plan to the public is critical to implementation. The Rogue River TSP consisted of the following public involvement mechanisms:

- Workshops throughout the planning process with the TSP Technical Advisory Committee (TAC) which includes representatives from the City of Rogue River, Jackson County, Rogue Valley Council of Governments, Oregon Department of Transportation, and TriLand Design Group.
- A questionnaire designed to solicit public opinion on needed and desired transportation and land use related improvements for the City's Urban Growth Boundary.
- Interviews with Rogue River residents representing a cross-section of the community to identify transportation issues and solicit input regarding transportation-related needs and desires.
- Three community open houses where the community is invited to inform the public of the TSP process and provide initial input regarding transportation issues, needs, and desires; review and comment on transportation alternatives, and review and comment on recommended transportation system plans and recommendations.
- Joint public hearings with the City Council and Planning Commission.
- Agency Interviews.
- Stakeholder Questionnaire.

Section 1 – Plans and Policies Review

Overview

This section identifies existing plans, policies, and regulations that impact Rogue River's transportation system; and identifies accomplishments needed to comply with the Transportation Planning Rule and 1999 Oregon Highway Plan.

Project Purpose

In 2003, the City of Rogue River adopted a Transportation System Plan (TSP) as the Transportation Element of the City Comprehensive Plan. Since adoption of the TSP, numerous changes have taken place in the city, as well as Oregon State law. The TSP update will build on the success of the current TSP, provide necessary updates, and ensure compliance with existing laws, rules, and regulations.

Project Objectives

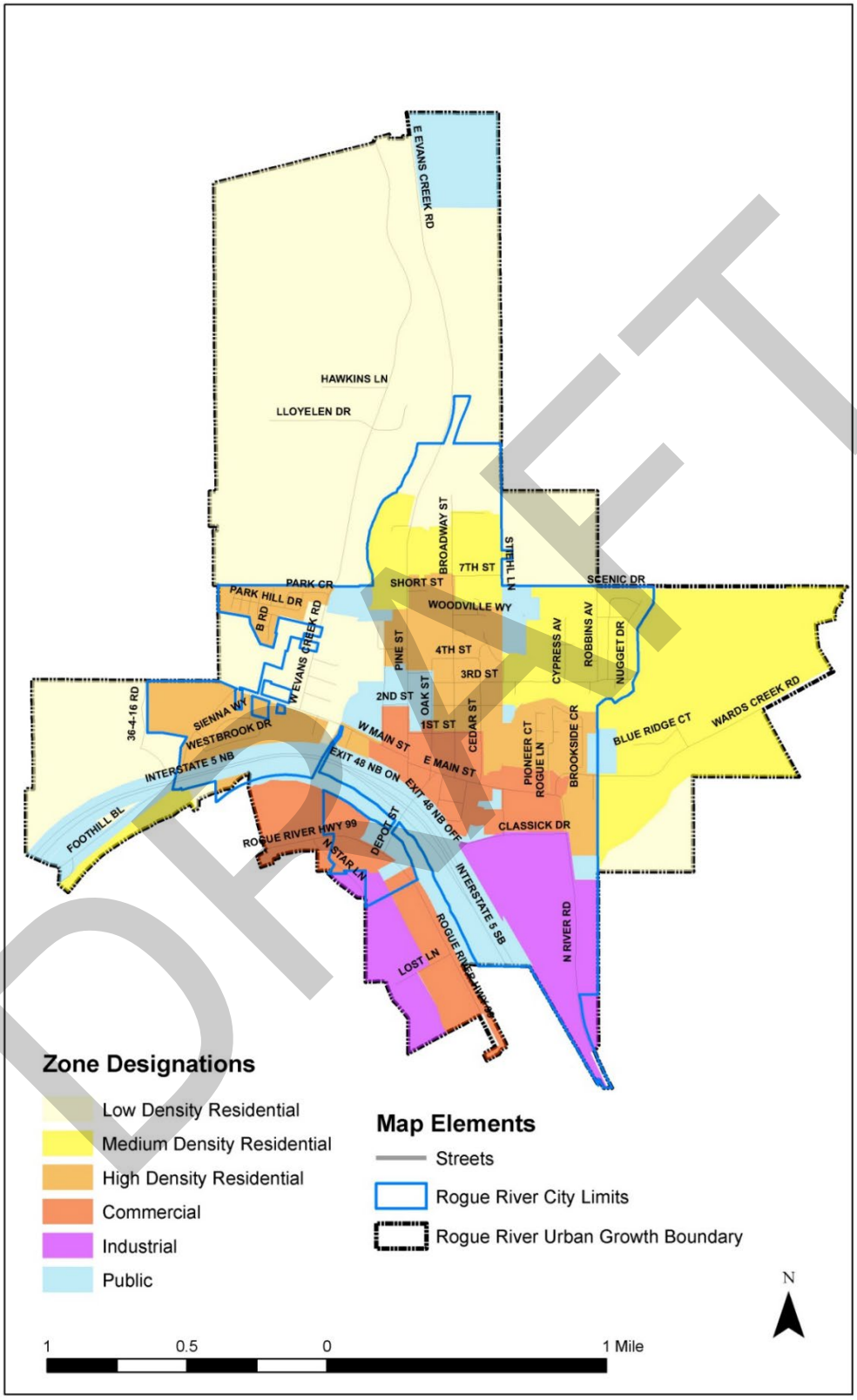
The TSP update includes several objectives:

- Provide for a safe and efficient transportation system supportive of existing and future land uses
- Prioritize improvement projects
- Create a project list for soliciting funding through the Middle Rogue Metropolitan Planning Organization
- Establish a document that is simple and easy to understand for developers and the community
- Include a Safe Routes to School component that includes pedestrian improvments. Comply with applicable state and local laws, rules, and regulations.

Project Area

The TSP update covers the area within city limits and the urban growth boundary (see map on following page).

Rogue River Comprehensive Plan Zone Designation



Stakeholder Outreach

One of the values of updating the existing TSP is the opportunity to engage the community in the planning process. A first phase of the involvement included interviews with agencies and other firms who make extensive use of the transportation system. Interviews centered on three questions:

- What transportation challenges do you face in Rogue River?
- Are there particular problems or bottlenecks that affect you?
- What potential transportation improvements do you suggest?

Most responses indicated that the street system functions well, with the exception of the area around the I-5 interchange. The intersection of Depot Street, Pine Street, and Classick Drive was identified as the most difficult to negotiate in the city. It is a three-way stop because the railroad track eliminates a stacking area between the interchange and the intersection for northbound Depot Street traffic. Josephine Community Transit (JCT) and Fire District #1 cited this area as a challenge because of the length of their vehicles. The Police Chief also noted this concern. The Fire District also noted that the intersection creates maneuvering problems for Murphy Mill's softwood plywood plant, located on North River Road, which is Rogue River's largest industrial employer.

Rogue River School District uses First Student as its transportation provider. Both the district and the company indicated that the primary vehicular challenge is the access from East Evans Creek Road to the high school. The 20 mile-per-hour school zone was removed, and the increased speeds in front of the school create concerns about the hazard of slow-moving buses entering the road. The primary deficiency noted by the school district is the lack of a connected sidewalk system for students to walk to the elementary and middle schools on Pine Street. The Police Chief stated that the department frequently receives complaints of speeding traffic not stopping at crosswalks near the school. He also reported a high number of similar complaints on East Main Street at Broadway and near the shopping center. The suggested consideration of flashing crosswalk warning signs to improve pedestrian safety

Jackson County Roads commented that all streets within the city limits are owned by the City, but that nearly all traffic in the upper Evans Valley funnels through the city to gain access to the freeway, significantly increasing traffic on the primary connecting streets. This is most evident on Pine Street between Main and Depot during commute times. While the Pine Street/Main Street intersection circulation was improved by a four-way stop, other solutions could include a roundabout or traffic signals.

Fire District #1 suggested that the creation of a four-way stop at the Pine Street and Main Street intersection could significantly improve traffic circulation in that area.

Josephine Community Transit cited the need for quick access off and on the freeway, noting the same difficulties with the rail tracks stated previously. They would prefer a location nearer the interchange rather than their present stop near City Hall, with a local ride system that connects to JCT.

Although outside of the study area, both the Police Department and the Fire Department expressed concern about the lack of emergency vehicle turnarounds on the freeway between Rogue River and Grants Pass. Whenever they move beyond the onramp onto the freeway, they

have to make an approximate 14-mile round trip to return to Rogue River, which diminishes their availability to city residents during that time.

Review of Relevant Planning Documents

Rogue River Comprehensive Plan

Goal 12 – Transportation

Goal: To provide and encourage a safe, convenient and efficient transportation system to facilitate the movement of people and goods in the City of Rogue River and urban growth area.

Policy: 1. To work toward creating a perimeter street network to reduce the traffic on existing major City streets.

2. To cooperate with Jackson County Transportation Department to provide a connector between East Evans Creek Road and West Evans Creek Road, and promote joint activity with the County in planning for other roads of mutual concern.

3. To require development of streets in accordance with City standards, the transportation plan, and the street plan, as development occurs in the planning area.

4. To seek cooperation from the county and State to construct new street and highway systems to reduce traffic congestion as the problem of increased traffic is worsened by growth outside of the City's jurisdiction.

Rogue River Municipal Code – Title 16 Subdivisions

Title 16 establishes standards for creating new lots and parcels in Rogue River. Chapter 16.05 includes general provisions, while Chapter 16.20 provides standards for street construction including street design, separation between streets, and methods to protect the function of arterials. The standards are included as Appendix A.

Rogue River Municipal Code – Title 17 Zoning

Title 17 includes standards for development property. Among the standards are requirements for access to public streets; improvements to street frontages when certain uses are proposed; and off-street parking provisions, both in number of spaces and design requirements. The standards are included as Exhibit B.

Jackson County Comprehensive Plan

The Jackson County Comprehensive Plan is a long-range policy guide for land use in the unincorporated area within the county. The Transportation Element of the Comprehensive Plan was completely revised in 2005 upon adoption of the Jackson County Transportation System Plan. The TSP was updated in 2017 and contains policies in sections on rural and suburban lands, urban lands, regional planning, and implementation that address the relationship between land use planning and transportation planning. The County maintains several roads that connect to city streets, including North River Road, Ward Creek Road, East Evans Creek Road, and Foothill Boulevard. It also has approval authority for all land uses in the Urban Growth

Boundary; the Urban Growth Management Agreement with Jackson County provides opportunity for Rogue River to comment on land use actions.

1999 Oregon Highway Plan

The state highway system is a critical component of the state's transportation system. The 1999 Oregon Highway Plan (OHP) is a mechanism to help the State efficiently and effectively guide the development, operations, and maintenance of the state highway system over the next several years. The OHP is relevant to Rogue River in that in that Interstate 5 and Highway 99 traverse through the southern part of the City. Interstate 5 is the primary access to, from, and passing by Rogue River. Highway 99 is an alternative access to and from the City that is used my many local area residents. The interstate and the highway will continue to be primary transportation facilities which through traffic travels and area residents use to access businesses, residence, and other uses.

The 1999 OHP updates state highway directives identified in the 1992 Oregon Highway Plan. The OHP emphasizes:

- Efficient management of the system to increase safety, preserve the system and extend its capacity;
- Increased partnerships, particularly with regional and local governments;
- Links between land use and transportation;
- Access management;
- Links with other transportation modes; and
- Environmental and scenic resources.

The OHP has three main elements: the Vision, the Policy Element, and the System Element. The Policy Element identifies the following goals which address the OHP vision and elements. As the Rogue River TSP is developed, the OHP vision and elements need to be considered in order for the TSP to be consistent with the State vision, goals, and policies.

OHP Policy Element Goals	
GOAL 1	**System Definition**: To maintain and improve the safe and efficient movement of people and goods, and contribute to the health of Oregon's local, regional, and statewide economics and livability of its communities.
GOAL 2	**System Management**: To work with local jurisdictions and federal agencies to create an increasingly seamless transportation system with respect to development, operation, and maintenance of the highway and road system that: • Safeguards the state highway system by maintaining functionality and integrity; • Ensures that local mobility and accessibility needs are met; and • Enhanced system efficiency and safety.
GOAL 3	**Access Management**: To employ access management strategies to ensure safe and efficient highways consistent with their determined function, ensure the statewide movement of goods and services, enhance community livability and support planned development patterns, while recognizing the needs of motor vehicles, transit, pedestrians, and bicyclists.

GOAL 4	**Travel Alternatives**: To optimize the overall efficiency and utility of the state highway system through the use of alternative modes and travel demand management strategies.
GOAL 5	**Environmental and Scenic Resources**: To protect and enhance the natural and built environment throughout the process of constructing, operating, and maintaining the state highway system.

Transportation Planning Rule

The State of Oregon adopted the Transportation Planning Rule (TPR) to guide regional and local transportation planning in carrying out State Goal 12 -–Transportation. The TPR sets out specific guidelines for the development of a TSP. Below is a list of key performance standards that must be addressed in order to meet the Transportation Planning Rule and achieve an adequate TSP for the City of Rogue River.

- Public and Interagency Involvement
- Plan Consistency
- Consistency with State and Regional Plans
- Reduced Auto Reliance
- Network of Streets
- Transportation Accessibility
- Safety
- Efficient Transportation Management
- Safe and Convenient Walking and Bicycling
- Minimizing Adverse Economic, Social, Environmental and Energy (ESEE) Consequences
- Intermodal Linkage and Passenger Services Coordination
- Minimizing Conflicts Between Modes
- Financial Plan
- Enabling Ordinances
- Facility/Corridor Protection Ordinances
- Development Ordinances to Encourage Alternate Mode Usage

In development of this plan, individual modal plan elements will be produced for:

- Roadway network plan
- Public Transportation
- Bicycle and Pedestrian Plan
- Air/Water/Rail Pipeline Plan
- Parking Plan

In addition to these modal elements, the plan must include policies and regulations for implementing the plan and a determination of transportation needs. In development of the modal elements, the plan must include inventories for road, bicycle, pedestrian, and public transportation facilities. These inventories will not only provide the location of facilities, but also information on their condition and service demand. The TPR also requires the TSP to include information on the location of planned major improvements.

The Oregon Transportation Options Plan

The Oregon Transportation Options Plan is the first intermodal topic plan of its kind for the state. Transportation Options (TO) include strategies, programs, and investment that enhance traveler opportunities and choices to bike, walk, take transit, share rides, and telecommute. The Plan provides an overview of existing transportation options providers across the state, establishes a vision and policies, and presents key strategies and initiatives. These elements provide guidance to support and advance TO program activities and integration with capital investment planning. The guiding vision for the TO plan envisions a transportation system that provides travelers of all ages and abilities with transportation options to access goods, services, and opportunities across the state. The plan includes several goals, each of which is accompanied by a set of policies, strategies, and highlighted best practices.

The Oregon State Rail Plan ("State Rail Plan")

The State Rail Plan, a state modal plan under the OTP, addresses long-term freight and passenger rail planning in Oregon. The State Rail Plan provides a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. The State Rail Plan identifies specific policies and planning processes concerning rail in the state, establishes a system of integration between freight and passenger elements into the land use and transportation planning processes, and calls for cooperation between state, regional and local jurisdictions in completing the plan. The TSP update will consider the needs of the rail freight system in developing recommended policies and projects related to improving safety and mobility in the county. In addition, the project technical advisory committee includes ODOT representatives that will advise on rail and freight interests.

The Oregon Freight Plan (OFP)

The Oregon Freight Plan is another modal plan of the OTP and implements the state's goals, and policies related to the movement of goods and commodities. Its purpose statement identifies the state's intent "to improve freight connections to local, Native American, state, regional, national and global markets in order to increase trade-related jobs and income for workers and businesses." The objectives of the plan include prioritizing and facilitating investments in freight facilities (including rail, marine, air, and pipeline infrastructure) and adopting strategies to maintain and improve the freight transportation system. The plan defines a statewide strategic freight network. I-5 and parallel railroads are designated as a strategic corridor in the OFP. Maintaining and enhancing efficiency of the truck and rail freight system in the study area will be integrated into the updated TSP. The project advisory committees include representatives from ODOT and local freight interests.

Oregon Public Transportation Plan (OPTP)

The Oregon Public Transportation Plan is the modal plan of the OTP that provides guidance for ODOT and public transportation agencies regarding the development of public transportation systems. The OPTP Implementation Plan directs ODOT investments towards commuter and mobility needs in larger communities and urban areas and also in smaller communities where warranted. It also prioritizes investments in intercity connections statewide. Long-term implementation and funding is geared toward both modernization and preservation projects while preservation projects are more the focus for short term implementation and funding. The

TSP update process will coordinate with Josephine Community Transit (JCT) long-range and strategic planning in the TSP study area. The project CAC includes a representative from JCT.

Oregon Aviation Plan (OAP)

The Oregon Aviation Plan (OAP) is a modal plan of the OTP that defines policies and investment strategies for Oregon's public use aviation system for the next 20 years. The plan addresses the existing conditions, economic benefits, and jurisdictional responsibilities for the existing aviation infrastructure. The plan contains policies and recommended actions to be implemented by Oregon Department of Aviation in coordination with other state and local agencies and the Federal Aviation Administration. The OAP categorizes airports based on functional role and service criteria. Rogue River is not in proximity to any airport.

Oregon Transportation Safety Action Plan (Action Plan)

An element of the OTP, the Oregon Transportation Safety Action Plan (Action Plan) establishes a safety agenda to guide the investments and actions of ODOT and the state for the next 20 years. As indicated in the name of the plan, the emphasis of the OTSAP is action and implementation. Actions included in the OTSAP were chosen based on crash data and information provided by transportation safety experts. Consistent with the state's Action Plan, the TSP update process will identify sites with high occurrences of safety problems and will consider safety in the selection and prioritization of transportation projects to meet the city's future system needs for all modes of transportation.

MRMPO Transportation Plan (MRTP) and Transportation Improvement Program (TIP):

The MRMPO Transportation Plan (RTP) is a multi-modal transportation plan designed to meet the anticipated 25-year transportation needs within the MRMPO planning area boundary. The RTP serves as a guide for management of existing transportation facilities and for the design and implementation of future transportation facilities. The RTP establishes a set of transportation goals and associated policies, potential actions, and performance indicators. The focus of the RTP is the presentation of the region's funded projects. Pursuant to Federal Highway Administration rules (23 CFR Part 450.322), MPO plans must show capital investment, operations, and management strategies that promote an integrated multi-modal transportation system over a horizon of at least 20 years. The projects must be "financially constrained;" funding for all projects in the plan must be identified, or there must be a reasonable expectation for funding. The MRTP provides overall direction for programming and project selection, and projects in the TIP advances the goals and implement strategies first presented in the MTP. The projects in the MRTP are presented in tables and in maps, by jurisdiction and by project type and system need through 2040. Projects are categorized in terms of short-, medium-, and long-range implementation. The TSP update will identify projects that will be submitted to the MRMPO for inclusion in the MRTP and TIP.

State Transportation Improvement Program (STIP)

The State Transportation Improvement Program (STIP) is the four-year programming and funding document for transportation projects and programs for state and regional transportation

systems, including federal land and Indian reservation road systems, interstate, state, and regional highways, bridges, and public transit. It includes state- and federally-funded system improvements that have approved funding and are expected to be undertaken during the upcoming four-year period. The projects and programs undergo a selection process managed by ODOT Regions or ODOT central offices, a process that is held every two years in order to update the STIP. 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 eventually amend the STIP to include projects from the updated TSP.

Oregon Administrative Rule (OAR) 734-051

The Oregon Administrative Rule (OAR) 734-051 defines the State's role in managing access to highway facilities in order to maintain functional use and safety and to preserve public investment. OHP Policy 3A and OAR 734-051 set access spacing standards for driveways and approaches to the state highway system. The standards are based on state highway classification and differ depending on posted speed and average daily traffic volume. OAR 734-051 regulates access management on state roadways; analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities. Implementation measures that will be developed for the TSP update may entail local code amendments to ensure that the LDO is consistent with these access management requirements as well as TPR and TSP recommendations related to access management.

Existing Transportation System Plan – City of Rogue River TriLand Design Group, Inc. /Access Engineering

The current City of Rogue River Transportation System Plan was completed in 2001 and serves as a foundation for the updated plan. It described conditions existing at the time and recommended a number of projects. Many of the Goals and Policies will carry over to the updated plan. The updated project list will evaluate projects in the current plan that have not been implemented. Some will remain in the new plan, while others will be eliminated or modified.

ROGUE RIVER TRANSPORTATION SYSTEM PLAN PROJECT LIST						
#	Project	Timing of Improvement			Cost Estimate	Funding Source
		1-5 years	6-10 years	10-20 years		
STREET PROJECTS EXPECTED TO BE FUNDED IN THE NEXT 20 YEARS						
A.	Depot Street Bridge Replacement				Predetermined	Federal and State
B.	Depot St./Pine St./Classick Dr. Intersection					
	B.1 Widen Depot Street				$50,000	State, County, City
	B.2 Revised Permitted Movements				$10,000	City
	B.3 Pine Street Right Turn Lane				$20,000	City
C.	Main St/Pine Street Intersection					
	C.1 Traffic Signal				$150,000	County, City
	C.2 Realign Main Street				$1 million	State Grant, County, City
D.	Main St/Broadway St. Traffic Signal				$150,000	City
E.	Improve Visibility at Intersections					
	E.1 E. Main St./Broadway St.				$5,000	City
	E.2 E. Main St./Cedar St.				$5,000	City
	E.3 E. Main St./Oak St.				$5,000	City
	E.4 3rd St./Oak St.				$5,000	City
	E.5 1st St./Oak St.				$5,000	City
	E.6 1st St./Pine St.				$5,000	City
	E.7 Abbey's Parking Lot				$5,000	City
F.	E. Main Street Bridge Replacement at Wards Creek				$300,000	Federal/State Grants
G.	W. Main Street Bridge Replacement at Evans Creek				$300,000	Federal/State Grants
H.	Classick Drive Bridge Repair				Predetermined	City/State
I.	3rd Street Improvements					
	I.1 Widening				$250,000	State Grants, City
	I.2 Alternative Street Access				$575,000	Developers
J.	Downtown Streetscape Improvements				Determine in refinement plan	Federal/State Grants
K.	Downtown Parking				Varies per specific project	City
L.	Pine St./E. Evans Creek Rd. Improvements				Determine per specific design	State Grants, County, City
M.	New Bridge Across Evans Creek at North End of City				$500,000	Federal/State Grants, County
N.	Truck Route Designation and Signage, Timing				$5,000	City

#	Project	Timing of Improvement			Cost Estimate	Funding Source
O.	Circulation and Parking Improvements at Schools					
	O.1 Berglund Street				Predetermined	State Grants, City
	O.2 Oak St. Between 1st St. and 3rd St.				$80,000	State Grants, City
	O.3 E. Evans Creek Rd. at the High School				$5,000	State Grants, City
P.	N. River Rd. Widening				$35,000	Federal/State Grants, County
Q.	Storm Water Master Plan				$35,000	City, State Grant
UNFUNDED STREET PROJECTS						
R.	Arterial/Collector Street Access Improvements				$100k-$500k	County, City
S.	Local Street Connectivity				--	City/Developers
T.	Emergency Vehicle Access/Turnaround				NA	City, Developer
PEDESTRIAN AND BIKEWAY PROJECTS EXPECTED TO BE FUNDED IN THE NEXT 20 YEARS						
U.	Rogue River Pathway				Per specific design(s)	State Grants
V.	Evans Creek Pathway				Per specific design(s)	State Grants
UNFUNDED PEDESTRIAN AND BIKEWAY PROJECTS						
W.	Wards Creek Pathway				Per specific design(s)	State Grants
PUBLIC TRANSPORTATION PROJECT EXPECTED TO BE FUNDED IN THE NEXT 20 YEARS						
X.	Improve Public Transportation Services				NA	County, State
UNFUNDED RAIL, WATER, PIPELINE, AND AIR TRANSPORTATION PROJECT						
Y.	Passenger Rail Service				NA	Federal/State

Funding for projects expected to be funded over the next 20 years and for which a cost estimate is possible at this time totals $3.5 million. Projects identified in the above table that are expected to funded over the next 20 years but do not have cost estimates at this time are identified below. Cost estimates for these projects are already funded or should be made once additional studies or designs are prepared.

- Depot Street Bridge Replacement
- Classick Drive Bridge Repair
- Downtown Streetscape Improvements
- Pine Street/E. Evans Creek Road Improvements
- Rogue River Pathway
- Evans Creek Pathway
- Public Transportation Improvements

Based on the traffic analysis and projections identified in the Rogue River Transportation System Plan 2000 – 2001, the following future facility needs were recommended.

- **Depot Street**
  The section of Depot Street from the railroad to Highway 99 should result in a 3-lane section. The bridge replacement project will be an element that is part of this improvement. This will help the ramp intersections initially. At some point in the near future traffic signals will need to be installed and the ramps widened to two lanes.

  Depot Street should be widened from the north I-5 ramps north across the railroad tracks to Pine Street/Classick Drive so that there are two inbound lanes – a left and a through+right. That will help outbound traffic identify where traffic is headed. Consider prohibiting left turns and through movements from Classick Drive as well as left turns and through movements onto Classick Drive from Pine Street and Depot Street. Eventually a separate right-turn lane will be useful on Pine Street at Depot Street.

- **Main Street/Pine Street Intersection**
  Install a traffic signal. The traffic signal would initially operate without realignment by separating the east and west traffic signal phases. The second part of this intersection improvement is to realign Main Street so the through traffic movements align.

- **Main Street/Broadway Street**
  Install a traffic signal.

- **Access Management**
  Minimize access driveways, where feasible, by combining them at property lines and providing curbs and sidewalks to define roadways versus pedestrian areas.

Several projects on the list were completed, including the Depot Street bridge replacement. Depot street was widened and permitted movements were revised. The West Main Street Bridge over Evans Creek was replaced, and the City completed downtown streetscape improvements. The City also adopted a Storm Water Master Plan. The Rogue River Pathway was constructed, connecting the city with Valley of the Rogue State Park.

City of Rogue River 15-40 Financial Forecasts

City of Rogue River										
Street System Local Revenues and Non-Capital Expenses										
City Revenue Sources							Non-Capital Expenses			
Year	System Dev Charges	Subtotals SDC	Street Impact Fee	Subtotals SIF	Misc.	Subtotal Misc	Admin	Debt Service	Maint.	Subtotal Non Capital
2015	$10,000		$16,000		$89,000		$10,000	$89,000	$100,000	
2016	$10,250		$16,400		$139,000		$10,250	$89,000	$102,500	
2017	$10,506		$16,810		$89,000		$10,506	$89,000	$105,063	
2018	$10,769		$17,230		$89,000		$10,769	$89,000	$107,689	
2019	$11,038		$17,661		$139,000		$11,038	$89,000	$110,381	
2020	$11,314	**$63,877**	$18,103	**$102,204**	$89,000	**$634,000**	$11,314	$89,000	$113,141	**$1,236,651**
2021	$11,597		$18,555		$89,000		$11,597	$89,000	$115,969	
2022	$11,887		$19,019		$139,000		$11,887	$89,000	$118,869	
2023	$12,184		$19,494		$89,000		$12,184	$89,000	$121,840	
2024	$12,489		$19,982		$89,000		$12,489	$89,000	$124,886	
2025	$12,801		$20,481		$139,000		$12,801	$89,000	$128,008	
2026	$13,121		$20,993		$89,000		$13,121	$89,000	$131,209	
2027	$13,449		$21,518		$89,000		$13,449	$89,000	$134,489	
2028	$13,785		$22,056		$139,000		$13,785	$89,000	$137,851	
2029	$14,130		$22,608		$89,000		$14,130	$89,000	$141,297	
2030	$14,483	**$129,925**	$23,173	**$207,880**	$89,000	**$1,040,000**	$14,483	$89,000	$144,830	**$2,319,174**
2031	$14,845		$23,752		$139,000		$14,845	$89,000	$148,451	
2032	$15,216		$24,346		$89,000		$15,216	$89,000	$152,162	
2033	$15,597		$24,955		$89,000		$15,597	$89,000	$155,966	
2034	$15,987		$25,578		$139,000		$15,987	$89,000	$159,865	
2035	$16,386		$26,218		$89,000		$16,386	$89,000	$163,862	
2036	$16,796		$26,873		$0		$16,796	$0	$167,958	
2037	$17,216		$27,545		$50,000		$17,216	$0	$172,157	
2038	$17,646		$28,234		$0		$17,646	$0	$176,461	
2039	$18,087		$28,940		$0		$18,087	$0	$180,873	
2040	$18,539	**$166,315**	$29,663	**$266,104**	$50,000	**$645,000**	$18,539	$0	$185,394	**$2,274,463**
Totals	**$360,117**	**$360,117**	**$576,187**	**$576,187**	**$2,319,000**	**$2,319,000**	**$360,117**	**$1,869,000**	**$3,601,171**	**$5,830,288**
Assumptions	2.5% annual increase		2.5% annual increase		Includes $89,000 per year from General Fund to 2025 and $50,000 every 3 years from SCA		2.5% annual increase		2.5% annual increase	

Appendix 1- Rogue River Municipal Code – Title 16 Subdivisions

Chapter 16.05 General Previsions – Section 16.05.020 Definitions

"Street" or "road" means a public or private way that is created to provide ingress or egress for persons to one or more lots, parcels, areas or tracts of land, excluding a private way that is created to provide ingress.

1. "Alley" means a narrow street through a block primarily for vehicular service access to the back or side of properties otherwise abutting on another street.
2. "Arterial" means the street intended to transport large quantities of traffic in an efficient, rapid manner, having a minimal number of controlled access points, and which is primarily a traffic artery for inter-communication among large areas.
3. "Collector" means a street intended to collect and transport traffic from a varying number of local neighborhoods to arterial streets, and having a minimal number of controlled access points, used to some extent for through traffic and to some extent for access to abutting properties.
4. "Cul-de-sac" means a local street with only one outlet and having an approved terminal for safe and convenient turnaround of vehicles.
5. "Half street" means half of the width of a street, or more than half of the width of the street as determined by the director of public works, usually along the side of a subdivision where the remaining portion of the street could be provided in another subdivision.
6. "Local" means a street intended to provide direct access from other streets to individual properties and allow traffic movement within a neighborhood.

"Street plug" means a strip of property, usually one foot in width, overlaying a dedicated street that is reserved to the city for control of access until such time as additional right-of-way is accepted by the city for continuation of or widening of the street. Also referred to as "reserve strip".

Chapter 16.20 Development Standards – Section 16.20.120 Street Standards

A. General. The location, width, and grade of streets shall be considered in their relation to existing and planned streets, to topographical conditions, to pubic convenience and safety, and to the proposed use of land to be served by the streets, The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried considering the terrain. The arrangement of streets shall either:
    1. Provide for the continuation of an appropriate projection of existing principal streets in the surrounding area; and
    2. Conform to a Master Plan for the neighborhood approved or adopted by the City Council to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical; or
    3. Conform to an approved Future Development Plan.
B. Minimum Right-of-Way and Roadway Width.
    1. Rogue River Street Design Standards

Functional Class	Right-of-Way Width	Pavement Width	Travel Lane Width	Center Turn Lane/ Median Width	Bicycle Lane Width	Parking Lane Width	Planter Width	Sidewalk Width
Arterial Street A*	60-80’	50-64’	12’	12’	5-6’	8’	4-6’	4-6’
Arterial Street B*	60-80’	36-48’	12’	12’	6’	None	None	6’
Collector Street	60-80’	50-64’	12’	12’	5-6’	8’	4-6’	4-6’
Local Street	40-60’	34-38’	10-11’	None	None	7-8’	4-6’	4-6’
Alley	20’	15-20’	15-20’	None	None	None	None	None
Pathway	10’	4-10’	None	None	-	None	None	-

Street A* - East Main Street, West Main Street, Depot Street, Pine Street.
Street B* - East Evans Creek, West Evans Creek, Foothill Boulevard, North River Road, Wards Creek Road, Rogue River Highway.

2. Cul-de-Sacs. Radius for turn-around at the end of cul-de-sacs shall have a minimum right-of-way width of 40 feet and a minimum roadway width of 28 feet.
3. Private driveways accessing city streets shall have a minimum width of 12 feet, and shall be paved with asphaltic concrete, concrete or a permeable rock material approved by the city. Where physical conditions, particularly topography or the size and shape of the tract, make it impractical to otherwise provide buildable sites or less than adequate rights-of-way, the matter shall be submitted for determination, using the variance procedure in Chapter 16.50 RRMC.

C. Reserve Strips. Reserve strips or street plugs controlling access to streets shall be approved where necessary for the protection of the public welfare or of substantial property rights. The control and disposal of the land comprising such strips shall be placed within the jurisdiction of the city under conditions approved by the city council.

D. Alignment. As far as is practical, streets shall be in alignment with existing streets by continuations of the centerlines thereof. Staggering of streets making “T” intersections at collectors and arterials shall not be designed so that jogs of less than 300 feet on such streets are created, as measured from the centerline of the street intersections.

E. In order to promote efficient vehicular and pedestrian circulation throughout the city, the design of subdivisions and alignment of new streets shall conform to the following standards. The maximum block length shall not exceed:

1. Six hundred feet in residential districts;
2. Four hundred feet in commercial districts; and
3. Not applicable to industrial districts.

Exceptions to the above standards may be granted when an access way is provided at or near mid-block.

F. Spacing between local street intersections shall have a minimum separation of 125 feet, except where more closely spaced intersections are designed to provide an open space, pocket park, common area or similar neighborhood amenity. This standard applies to four-way and three-way (offset) intersections.

G. Minor collector and local residential streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods and

facilitate emergency access and evacuation. Appropriate design and traffic control such as four-way stops and traffic calming measures are the preferred means of discouraging or minimizing through traffic.

H. Development Adjoining Arterial Streets. Where development adjoins or is crossed by an existing or proposed arterial street, the development design shall separate residential access from through traffic and shall minimize traffic conflicts. The design shall include one or more of the following transportation elements:
    1. A parallel access street along the arterial with a landscape buffer separating the residential and through streets;
    2. Deep through lots abutting an arterial or major collector to provide adequate buffering with frontage along a residential street. Through lots shall conform to the buffering standards in RRMC 16.20.040;
    3. Screen planting at the rear or side property line should be contained in a non-access reservation or reserve strip along the arterial; or
    4. Other treatment suitable to meet the objectives of this subsection;
    5. If a lot has access to two streets with different classifications, primary access shall be from the lower classification street.

I. Proposed streets or street extensions shall be located to provide direct access to existing or planned commercial services and other neighborhood facilities, such as schools, shopping areas and parks.

J. Future Extensions of Streets. Where necessary to give access to or to divide adjoining land, streets shall be extended to the boundary of the subdivision or partition. The resulting dead-end streets may be approved with a temporary turn-around. Reserve strips and street plugs may be required to preserve the objective of street and utility extensions.

K. All local and collector streets which abut a development site shall be extended within the site to provide through circulation unless prevented by environmental or topographical constraints, existing development patterns or compliance with other standards in this code. This exception applies when it is not possible to redesign or reconfigure the street pattern to provide required extensions. Land is considered topographically constrained if the slope is greater than 15 percent for a distance of 250 feet or more. In the case of environmental or topographical constraints, the mere presence of a constraint is not sufficient to show that a street connection is not possible. The applicant must show why the environmental or topographic constraint precludes some reasonable street connection.

L. Intersection Angles. Streets shall be laid out so as to intersect at an angle as near to a right angle as practicable, except where topography requires a lesser angle or where a reduced angle is necessary to provide an open space, pocket park, common area or similar neighborhood amenity. In addition, the following standards shall apply:
    1. Streets shall have at least 25 feet of tangent adjacent to the right-of-way intersection unless topography requires a lesser distance;
    2. Intersections which are not at right angles shall have a minimum corner radius of 20 feet along the right-of-way lines of the acute angle; and
    3. Right-of-way lines at intersection with arterial streets shall have a corner radius of not less than 20 feet.

M. Existing Streets. Whenever existing streets adjacent to or within a tract are of inadequate width, additional right-of-way shall be provided at the time of the land division. Unimproved streets shall be improved at the cost of the developer.

N. Half Street. Half streets, while generally not acceptable, may be approved where essential to the reasonable development of the land division, when in conformity with the other regulations and when the city council finds it will be practical. Whenever a half street is adjacent to a tract to be divided, the other half of the street shall be provided within such tract. Reserve strips and street plugs may be required to preserve the objectives of half streets.

O. Cul-de-Sac. A cul-de-sac shall be as short as possible and shall have a maximum length of 400 feet and serve not more than 18 dwelling units. A cul-de-sac shall terminate with a circular turn-around. Cul-de-sacs or permanent dead-end streets may be used as part of a development plan; however, through streets are encouraged except where topographical, environmental, or existing adjacent land use constraints make connecting streets infeasible. Where cul-de-sacs are planned, access ways shall be provided connecting the ends of cul-de-sacs to each other, to other streets, or to neighborhood activity centers.

P. Access ways.
    1. Access ways for pedestrians and bicyclists shall be 10 feet wide and located within a right-of-way or easement. If the streets within the subdivision are lighted, the access ways shall also be lighted. Stairs or switchback paths may be used where grades are steep.
    2. Access ways for pedestrians and bicyclists shall be provided at mid-block where the block is longer than 600 feet.
    3. The city may determine, based upon evidence in the record, that an access way is impracticable. Such evidence may include but is not limited to:
        a. Physical or topographic conditions make an access way connection impractical. Such conditions include but are not limited to freeways, railroads, extremely steep slopes, wetlands, or other bodies of water where a connection cannot reasonable be provided.
        b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future, considering the potential for redevelopment.
        c. Where access ways would violate provisions of easements, covenants, restrictions, or other agreements existing as of May 1, 1995, that preclude a required access way connection.

Q. Sidewalks, Planter Strips, Bicycle Lanes. Sidewalks, planter strips, and bicycle lanes shall be installed in conformance with the Rogue River street standards. Maintenance of sidewalks, curbs, and planter strips is the continuing obligation of the adjacent property owner.

R. Street Names. Except for extensions of existing streets, no street name shall be used which will duplicate or could be confused with the name of an existing city street or county road. Street names and numbers shall conform to the established pattern in the city and shall be subject to the approval of the city council.

S. Grades and Curves. Grades shall not exceed six percent on arterials, 10 percent on collector streets or 12 percent on other streets. Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on collectors or 100 feet on other streets, and shall be to an even 10 feet. Where existing conditions, particularly the topography, make it otherwise impractical to provide buildable sites, the planning commission may accept

steeper grades and sharper curves. In flat areas, allowance shall be made for finished street grades having a minimum slope, preferably of at least one-half percent.

T. Streets Adjacent to Railroad Right-of-Way. Wherever the proposed land division contains or is adjacent to a railroad right-of-way, provision may be required for a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of the land between the streets and the railroad. The distance shall be determined with due consideration at cross streets of the minimum distance required for approach grades to a future grade separation and to provide sufficient depth to allow screen planting along the railroad right-of-way.

U. Alleys. Alleys shall be provided in commercial and industrial districts, unless other permanent provisions for access to off-street parking and loading facilities are approved by the city council. The corners of alley intersections shall have a radius of not less than 12 feet.

V. Street lights shall be installed in accordance with city standards. [Ord. 11-373-O § 8-7:4.420].

Appendix 2 - Rogue River Municipal Code – Title 17 Zoning

Chapter 17.05 Purpose and Definitions

Section 17.05.030 Definitions

- "Alley" means a public or private way which affords only a secondary means of access to abutting property.
- "Off-Street Parking" means a paved, open area, other than a street or public way, used for the parking of automobiles and available to the public whether for a fee, free or as an accommodation for clients or customers.
- "Street" means the entire width between the right-of-way lines of every way for vehicular and pedestrian traffic and includes the terms road, highway, land, place, avenue, and other such designations.

Chapter 17 Zoning

Sections 17.15.070, 17.20.070, 17.25.090 Residential Districts (R-E, R-1, and R-2)

Each residential zoning district includes the following provision:

- Driveway. All (single family dwelling construction, manufactured dwelling units, the replacement of any existing dwelling unit or major remodeling, and multiple family dwelling construction shall have a fully paved asphalt or concrete driveway beginning from a City maintained street to the garage serving the dwelling unit(s). It shall also be required to pave the portion of the public right-of-way being used ingress/egress to the property. Any private road beginning from a City maintained street shall also be paved with asphalt or concrete.

Section 17.30.080. C-1 Commercial District

Off-Street Parking. All uses shall provide off-street parking facilities as required in Chapter 17.70 RRMC except when located within a special district organized to provide common public parking areas.

Sections 17.50.040, 17.50.060 M-1 Industrial General District
Site Development Standards: p. The public road adjacent to any new development area will be improved by the property owner to meet City standards….
Off-Street Parking: All uses shall provide off-street parking facilities as required in Chapter 17.70 RRMC except when located within a special district organized to provide common public parking areas.

Section 17.65.080 Access
Residential lots shall have a minimum frontage of 60 feet upon a public street (other than an alley), except in the case of lots which abut a street having a center line radius of 150 feet or less. Commercial/industrial lots shall have 40 feet of frontage. In no instance shall a residential lot abut upon a street for a width of less than 40 feet as in the case of a cul-de-sac or 25 feet as in the case of a flag lot.

Chapter 17.70 Off-Street Parking and Loading
Section 17.70.020 Off-Street Parking: Number of Parking Spaces Required

Land Use Specific Use	Parking Spaces Required
1. Residential	
1. One and two family dwelling	2 car garage dwelling unit.
2. Multiple family dwelling:	2 ½ off-street parking spaces per dwelling unit.
3. Rooming or boarding houses, bed and breakfast establishment, residential hotel.	1 space for each guest accommodation plus 1 additional space for the owner/operator.
4. Senior citizen housing specifically for persons 55 years of age or older.	1 car garage plus 1 ½ off-street parking spaces per dwelling unit.
2. Commercial Residential	
1. Hotel and motel.	1 space per guest room or suite plus 1 additional space for the owner or manager.
2. Club; lodge.	Spaces to meet the combined requirements of the uses being conducted such as restaurants, auditoriums, etc.
3. Bed and Breakfast Establishment.	1 space for each guest accommodation plus 1 additional space for the owner/operator.
3. Institutions	
1. Welfare, homeless, or correctional institution.	1 space per five beds for patients or inmates.
2. Convalescent hospital, nursing home, rest home, home for the aged, congregate care, sanitarium, residential facility, residential home.	1 space per two beds for patients or resident.
4. Places of Public Assembly	
1. Church.	1 space per four seats or eight feet of bench length in the main auditorium
2. Library, reading room, museum, art gallery.	1 space per 400 square feet of floor area.
3. Preschool nursery, kindergarten.	2 spaces per teacher.
4. Elementary or junior high school.	3 spaces per classroom.
5. High School.	8 spaces per classroom.
6. Business, dancing, trade, technical or similar schools, classrooms or training centers.	2 spaces per each teaching station plus 1 space for every two students of design capacity.
7. Auditorium or other place of public assembly.	1 space per four seats or eight feet of bench length. If no other seats are provided, 1 space per 100 square feet of floor area.

	8. Recreation hall within apartment complex or planned unit development.	1 space per 200 square feet of floor area.
5. Commercial Amusement		
	1. Stadium, arenas, theater.	1 space per four seats or eight feet of bench length.
	2. Bowling alley.	8 spaces per lane.
	3. Dance hall, skating rink.	1 space per 100 sq. feet of floor area.
	4. Golf course.	5 spaces per hole.
6. Commercial		
	1. Retail store (except as provided in subsection 2 of this subsection.	1 space per 200 sq. feet of floor area.
	2. Retail store exclusively handling bulky merchandise such as automobiles, mobiles, furniture and large appliances.	1 space per 600 sq. feet of floor area.
	3. Service or repair shop.	1 spacer per 300 sq. feet of floor area.
	4. Bank; office (except medical and dental).	1 space per 300 sq. feet of floor area.
	5. Medical or dental office.	3 spaces per each practitioner plus 1 for each two employees.
	6. Mortuary.	12 spaces plus 4 spaces for each room in excess of two which can be used as a parlor or chapel.
	7. Eating or drinking establishment.	1 space per three seats or 1 space per 100 sq. feet of floor area, whichever is greater.
	8. Open air market, used car sales lot.	1 space for every 1,500 sq. feet of land area.
	9. Mini-storage facilities.	1 space for every 1,000 sq. feet of storage area plus 1 space for every 200 feet of office area.
7. Industrial		
	1. Manufacturing establishment.	2 spaces for every three employees on the two adjacent shifts or one space for every 500 sq. feet of floor area, whichever is greater.
	2. Wholesale establishment, warehouse, freight depot.	2 spaces for every three employees on the two adjacent shifts or one space for every 1,000 sq. feet of floor area, whichever is greater.
8. Other uses not specifically listed above shall furnish parking as required by the Planning Commission. In determining the off-street parking requirements for said uses, the Planning Commission shall use the above requirements as a general guide, and shall determine the minimum number of parking spaces required to avoid undue interference with the public use of street and alleys.		

(C) More than One Use. Where more than one use is included within any one building or on any single parcel, the parking requirements shall be the sum total of the requirements of the various uses, provided, however, where the operation of these different uses is such that the hours of operation or uses complement each other insofar as the parking demand is concerned, the Planning Commission may authorize a reduction in these requirements.

(D) Areas needed to meet the parking requirements of a particular building or use shall not be transformed or changed to another type of use, or transferred to meet the parking requirements of another building or use until the parking required for the original user of said parking area is provided at another location.

(E) Any building or use requiring five-tenths or more of a parking space shall be deemed to require the full space.

17.70.30 Design Requirements.

a. Size and Access. Each off-street parking space shall be not less than nine feet wide and 20 feet long, exclusive of access drives or aisles, and shall be of usable shape and

conditions. At the Planning Commission's discretion, up to 40 percent of the of—street parking requirement can be met with compact car spaces, which are a minimum of eight feet wide and sixteen feet long, and each space must be signed as a "Compact Car Only" space. Accessible parking spaces shall be provided in compliance with ORS 477.233. Specifically, one van accessible space (nine feet wide by 20 feet long, with an adjacent access aisle that is at least eight feet wide) shall be provided in any parking lot of 25 parking spaces or less. For each additional 25 parking spaces, one additional accessible parking space (nine feet wide and 20 feet long with an adjacent six-foot-wide aisle) shall be provided.

b. There shall be adequate provision of ingress and egress to all parking spaces. Where parking spaces do not abut on a public street or alley, there shall be paved access drives not less than 12 feet in width for one-way traffic or 18 feet in width for two-way traffic, leading to the parking and loading spaces.

c. Surfacing. Areas used for standing and maneuvering of vehicles shall have durable surfaces maintained adequately for all-weather use, and adequately drained. Durable surfaces are defined as asphaltic concrete and concrete. Such durable surface shall apply to all zoning districts. In addition, commercial and industrial zones shall be adequately drained as to avoid flow of water across sidewalks.

d. Lighting. Any lighting used to illuminate any off-street parking area shall be so arranged as to reflect the light away from the adjoining premises in any R district.

e. Multiple Dwelling Parking Spaces. Parking spaces for other than one and two-family dwellings shall be designed so that no backing movements or other maneuvering within a street other than an alley shall be required.

f. Service Drives. Service drives shall have minimum vision clearance area formed by the intersection of the driveway center line, the street right-of-way line, and a straight line joining said lines through points 20 feet from their intersection.

g. Parking Spaces. Parking spaces along the outer boundaries of a parking lot shall be contained by a curb or a bumper rail so placed to prevent a motor vehicle from extending over an adjacent property or a street.

h. R-District Off-Street Parking or Loading. In any residential district the off-street parking or lading areas shall not be located in a required front yard.

i. Parking Layout and Design. The distances required for various parking lay-outs and designs shall be as approved by the Planning Commission and contained in the "design standards for off-street parking facilities.

Section 2 – Existing Transportation System

Overview

This section describes existing conditions of the transportation system, using maps and narrative. Several of the maps include TPAU in the title; these maps are based on field work conducted by ODOT's Transportation Planning and Analysis Unit.

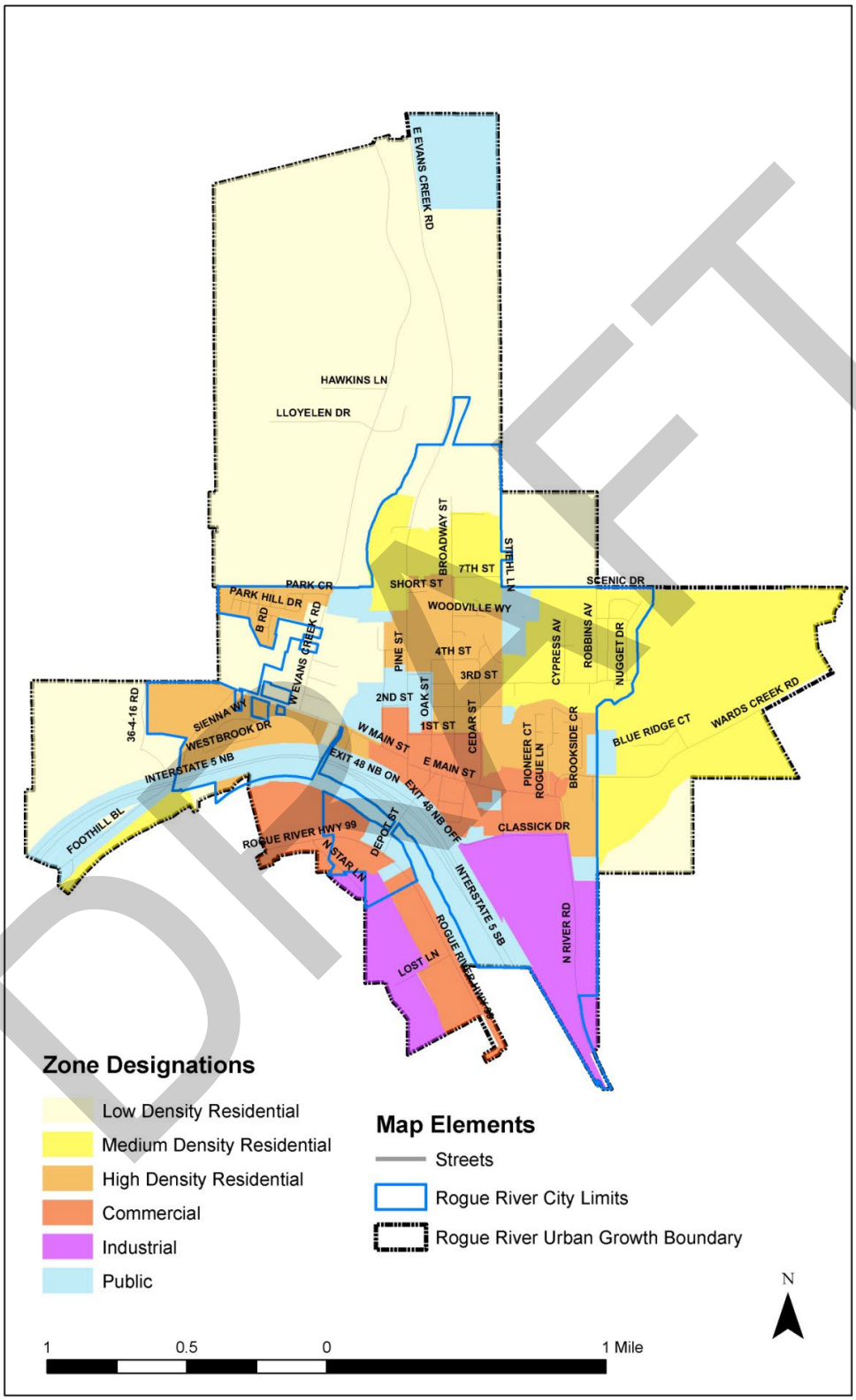
Existing Land Uses

Rogue River is a typical small city with land uses that reflect the zoning designations. According to the 2015 American Community 5-year estimate, approximately 50 percent of housing included single-family residences; 36 percent of housing was multi-family, and mobile homes or manufactured dwellings made up about 14 percent of the housing stock.

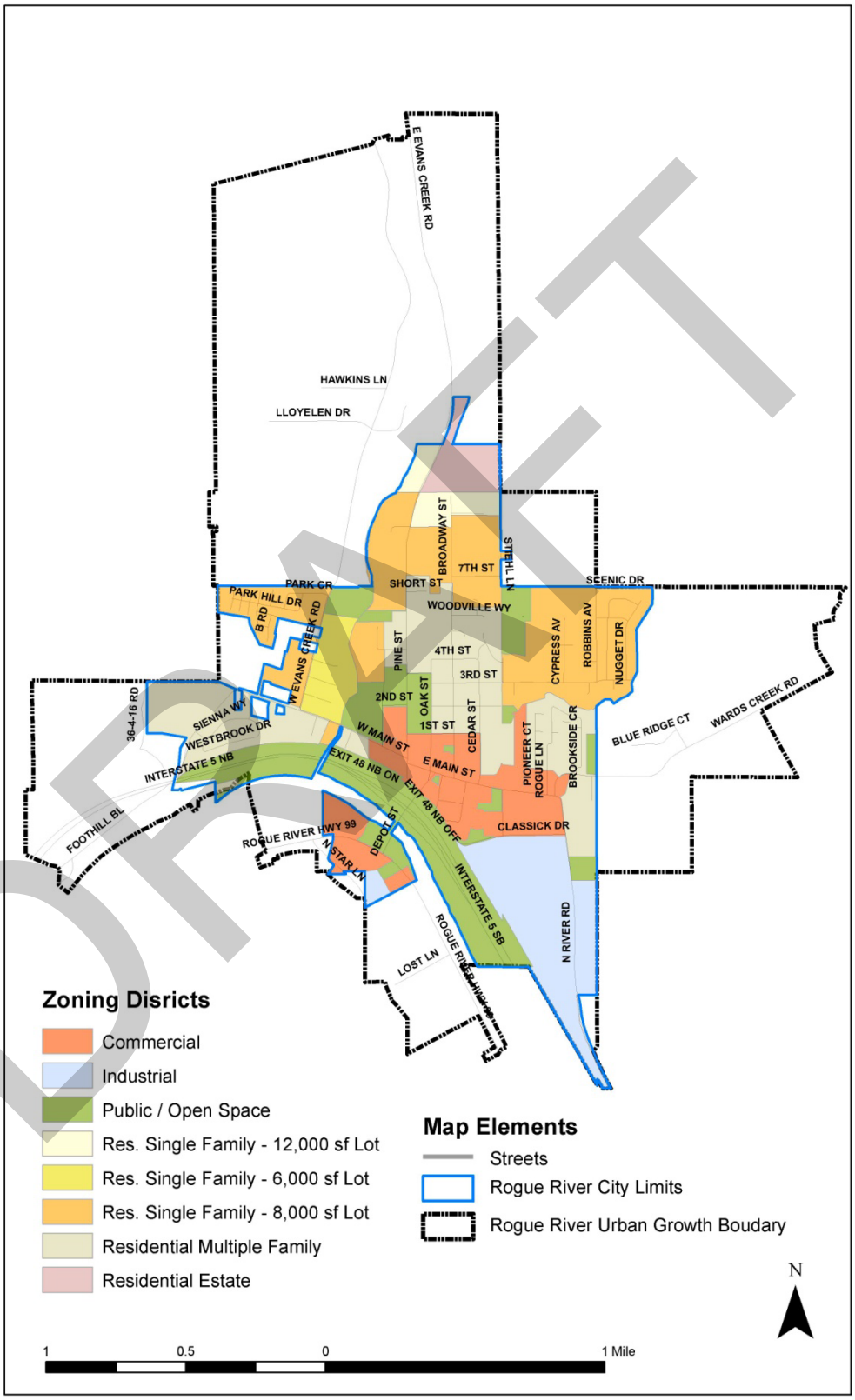
Commercial uses are concentrated along East and West Main streets, and Rogue River Highway. The primary industrial site is the Murphy Mill, located between Interstate 5 and North River Road. Rogue River Elementary and Middle School are in the city limits, while the high school is at the northern edge of the urban growth boundary, approximately one mile north of the city limits.

The Comprehensive Plan map shows anticipated land uses for the area within the urban growth boundary, while the Zoning Districts map shows the zoning only for the lands within the city limits. Of particular note are the concentrations of High Density Residential designations that provide for multiple-family residential development. These include the manufactured dwelling parks, a housing development in the west part of the city between Foothill Boulevard and the freeway. A large area immediately north of downtown is zoned for multi-family use although single-family uses predominate. The zoning anticipates that as the older single units age beyond usefulness, they will be replaced by higher density housing.

Rogue River Comprehensive Plan Zone Designation



Rogue River Zoning Districts



Existing Street Network

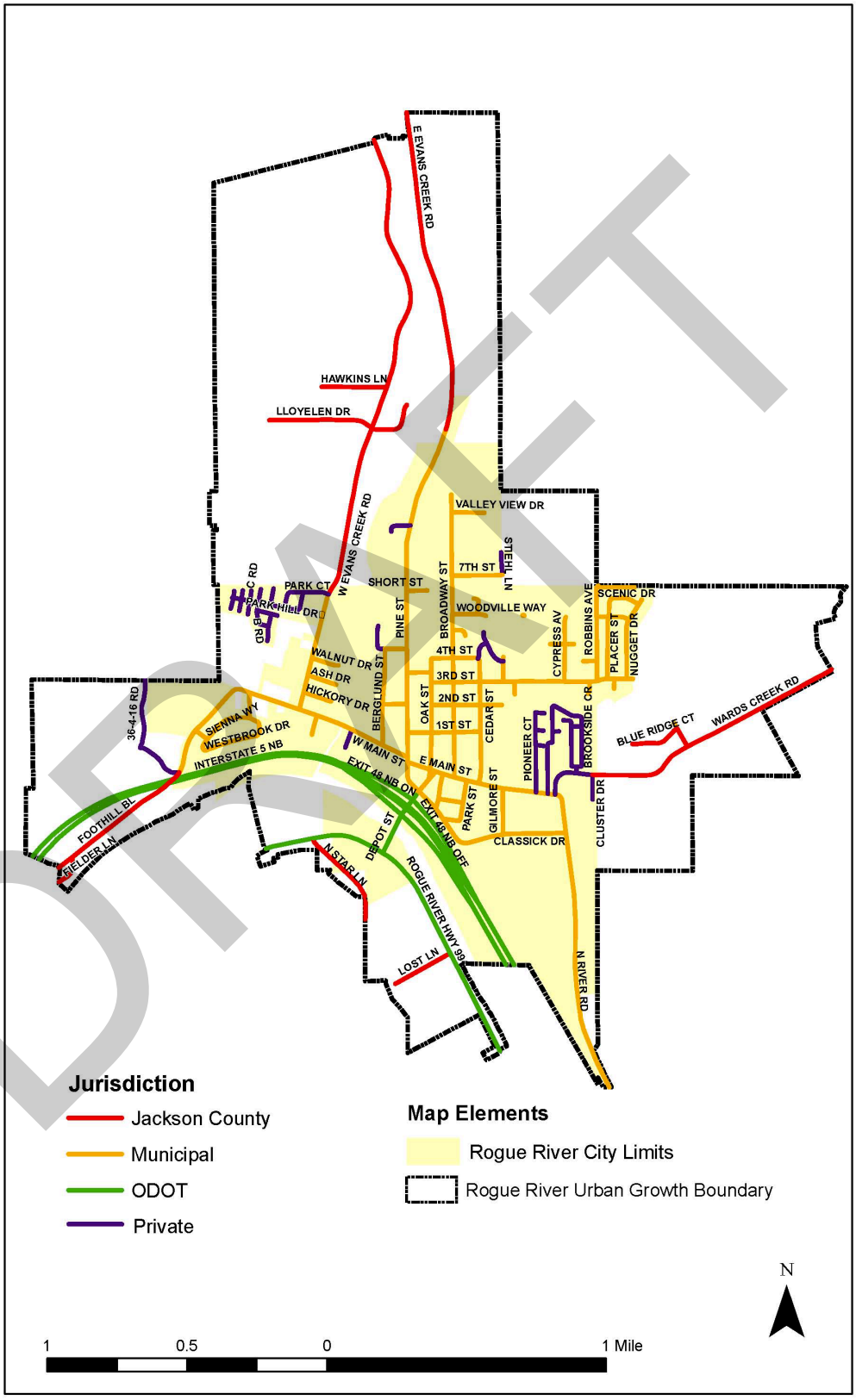
The following maps show these components of the street network:

- Jurisdictional responsibility
- Road classifications
- Number of travel lanes
- Pavement and shoulder widths
- Posted speeds
- Traffic control devices
- On-street parking

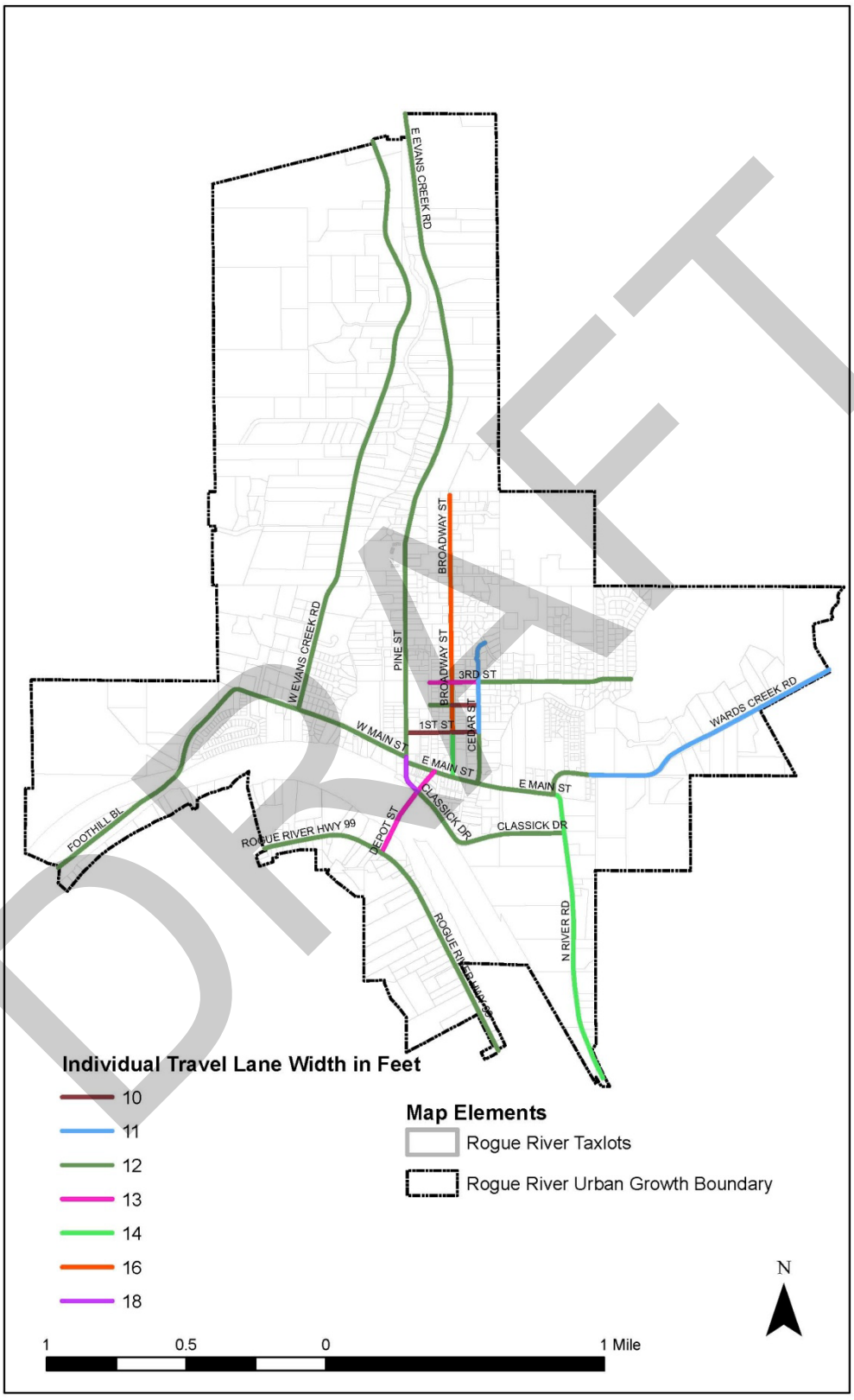
Rogue River has no designated local freight routes, but most industrial truck traffic is concentrated on North River Road and Classick Drive, connecting to the freeway at Depot Street, where stakeholders have noted significant access challenges connecting with I-5, which is a state/federal designated freight route.

Rogue River Highway, I-5, and the portion of Depot Street south of I-5 are state facilities. All other streets in Rogue River are two-lane and under City jurisdiction; several roads in the UGB are County-maintained. While local streets are shown for context, the street network maps provide information only for arterials and collectors, as specified in the project Statement of Work.

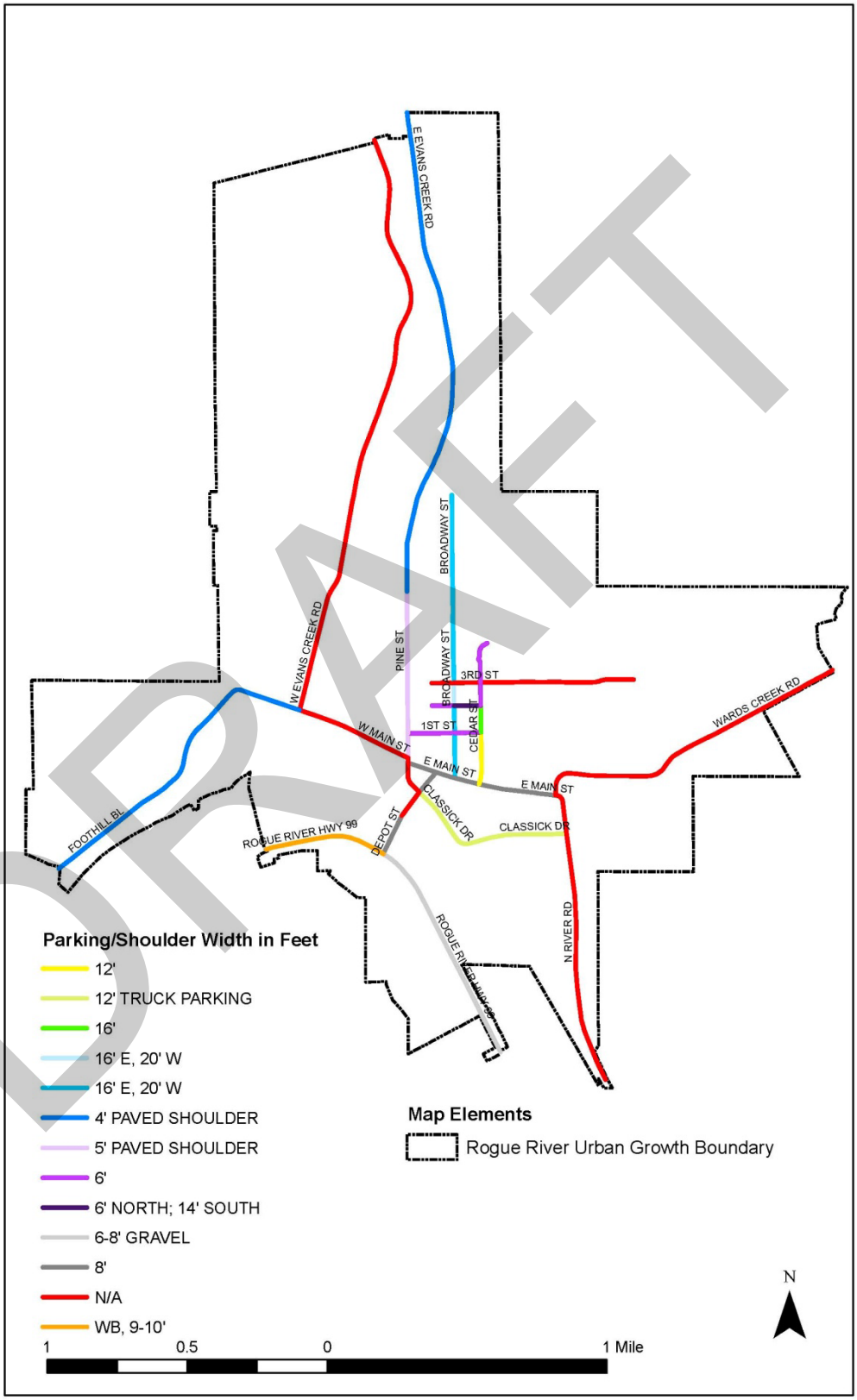
Rogue River Roadway Network Jurisdictional Responsibility



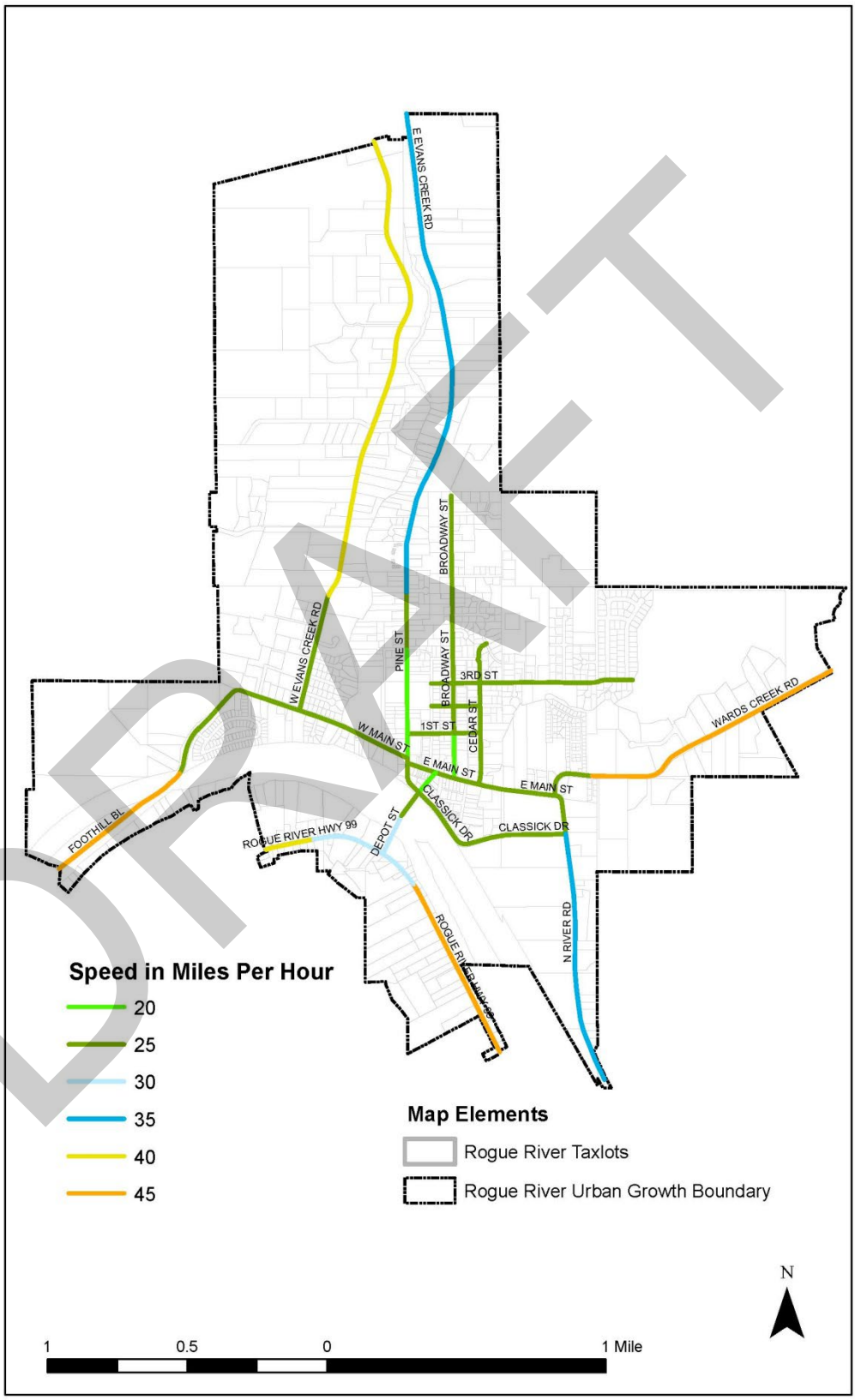
Rogue River TPAU Travel Lane (Pavement) Width



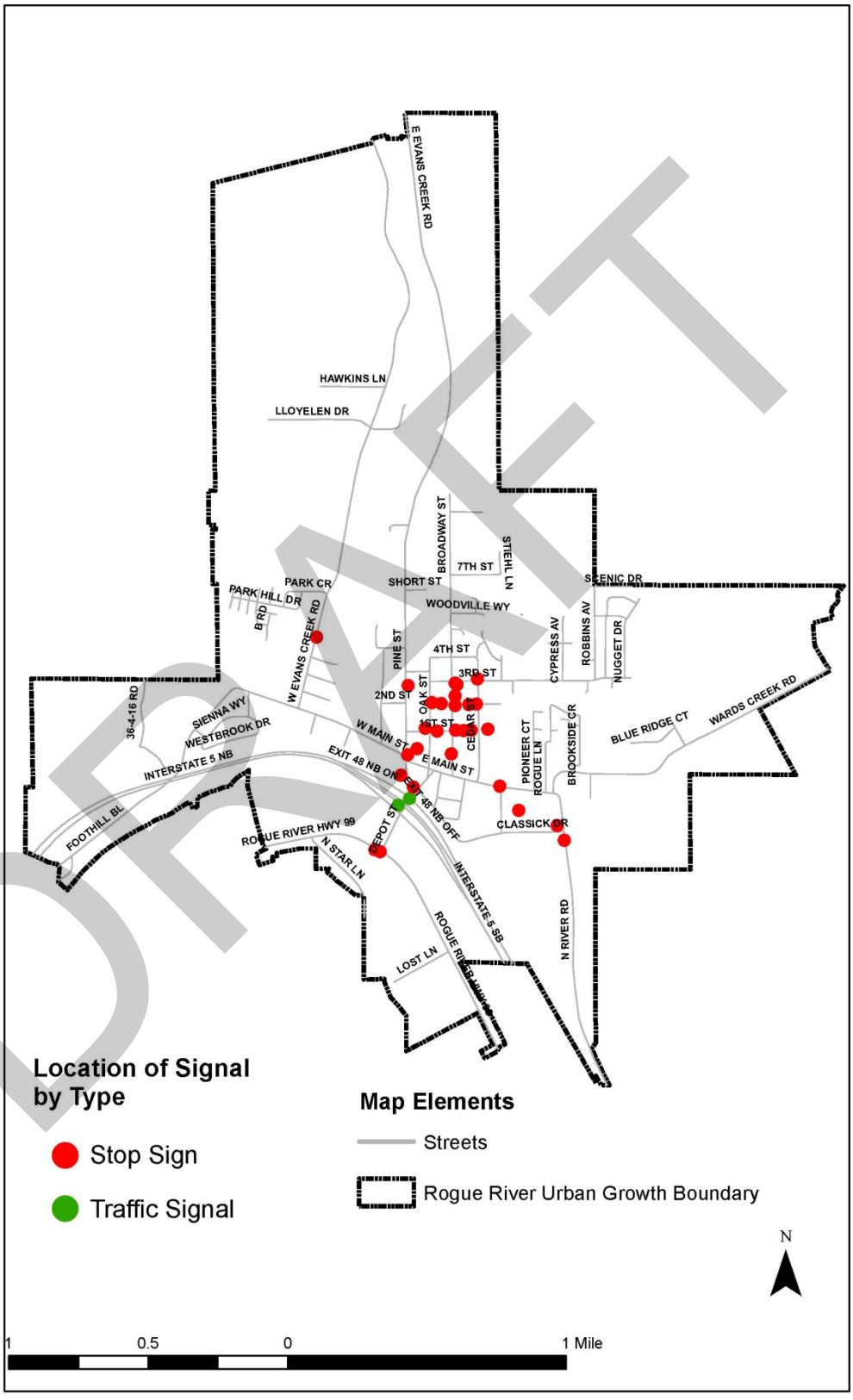
Rogue River TPAU Parking/Shoulder Width



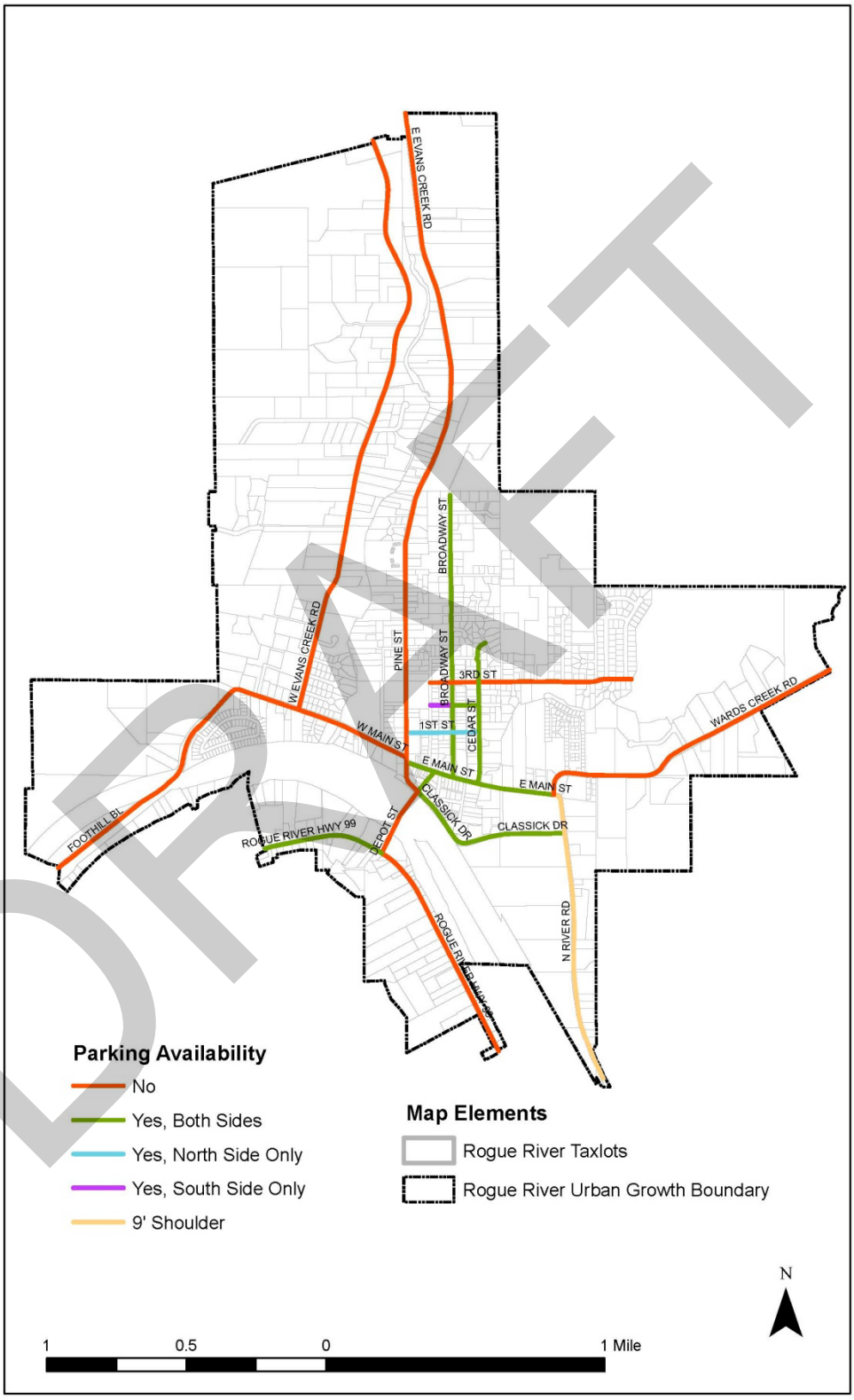
Rogue River TPAU Speeds



Rogue River Traffic Signals



Rogue River TPAU Parking

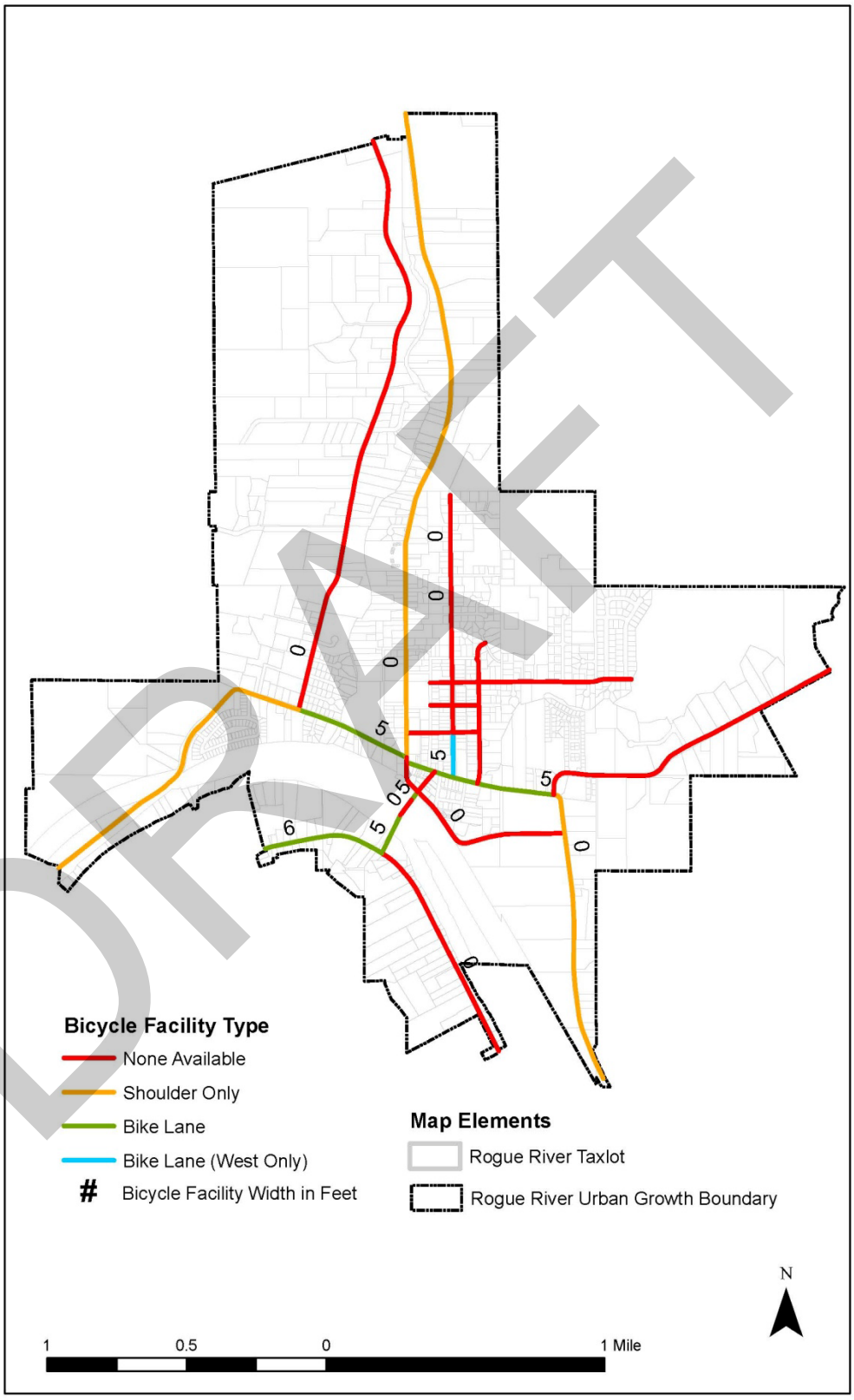


Existing Bicycle and Pedestrian Network

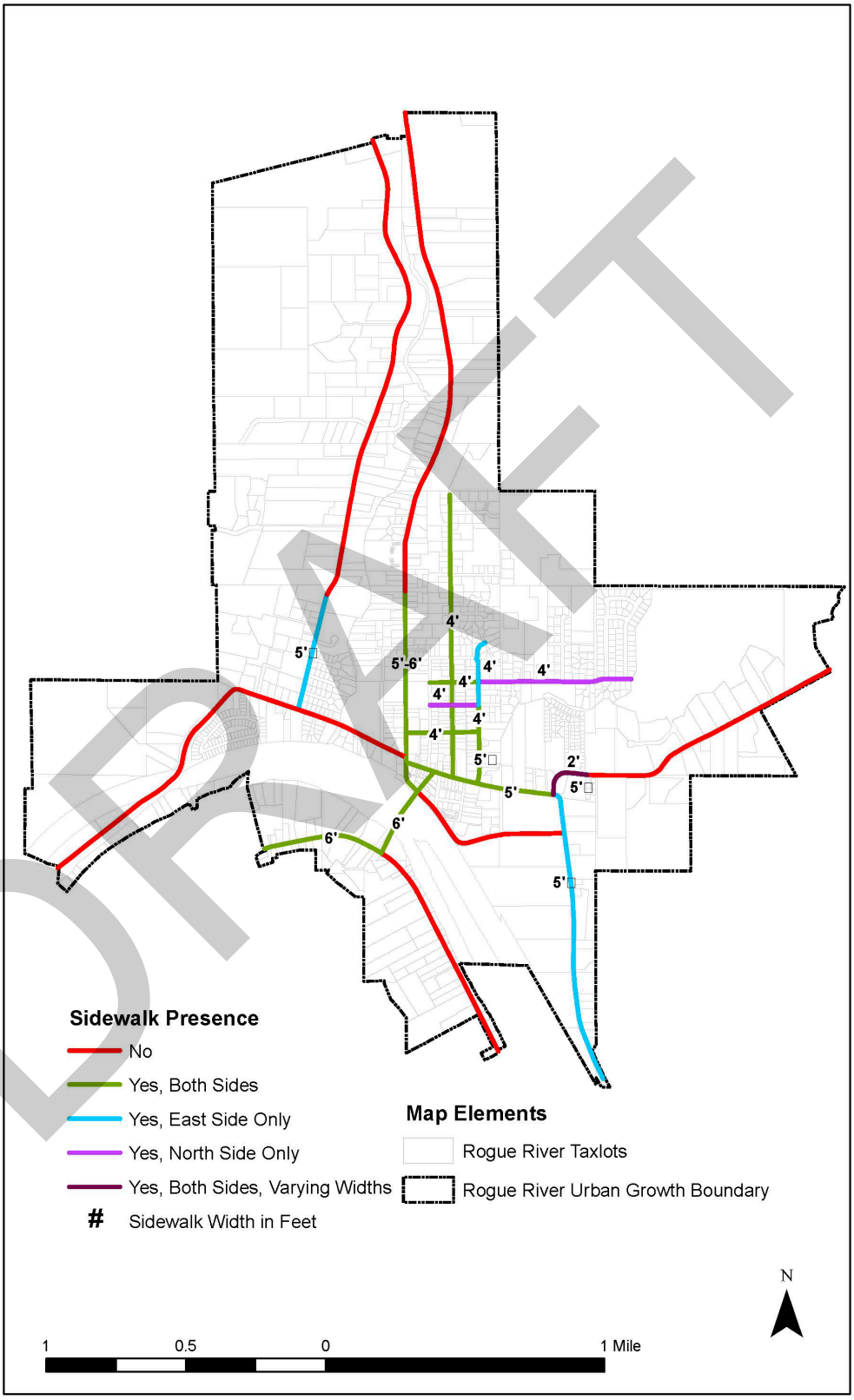
The following set of maps includes:

- Bicycle facility types, locations, widths, and ownership. This map also shows arterials and collectors that do not have bicycle facilities
- Pedestrian facility types, locations, widths, surface types, and ownership
- Sidewalk locations, including widths.
- Crosswalk locations
- ADA accessible sidewalk impediment
- Activity centers likely to attract bicyclists and pedestrians, such as the downtown core and schools

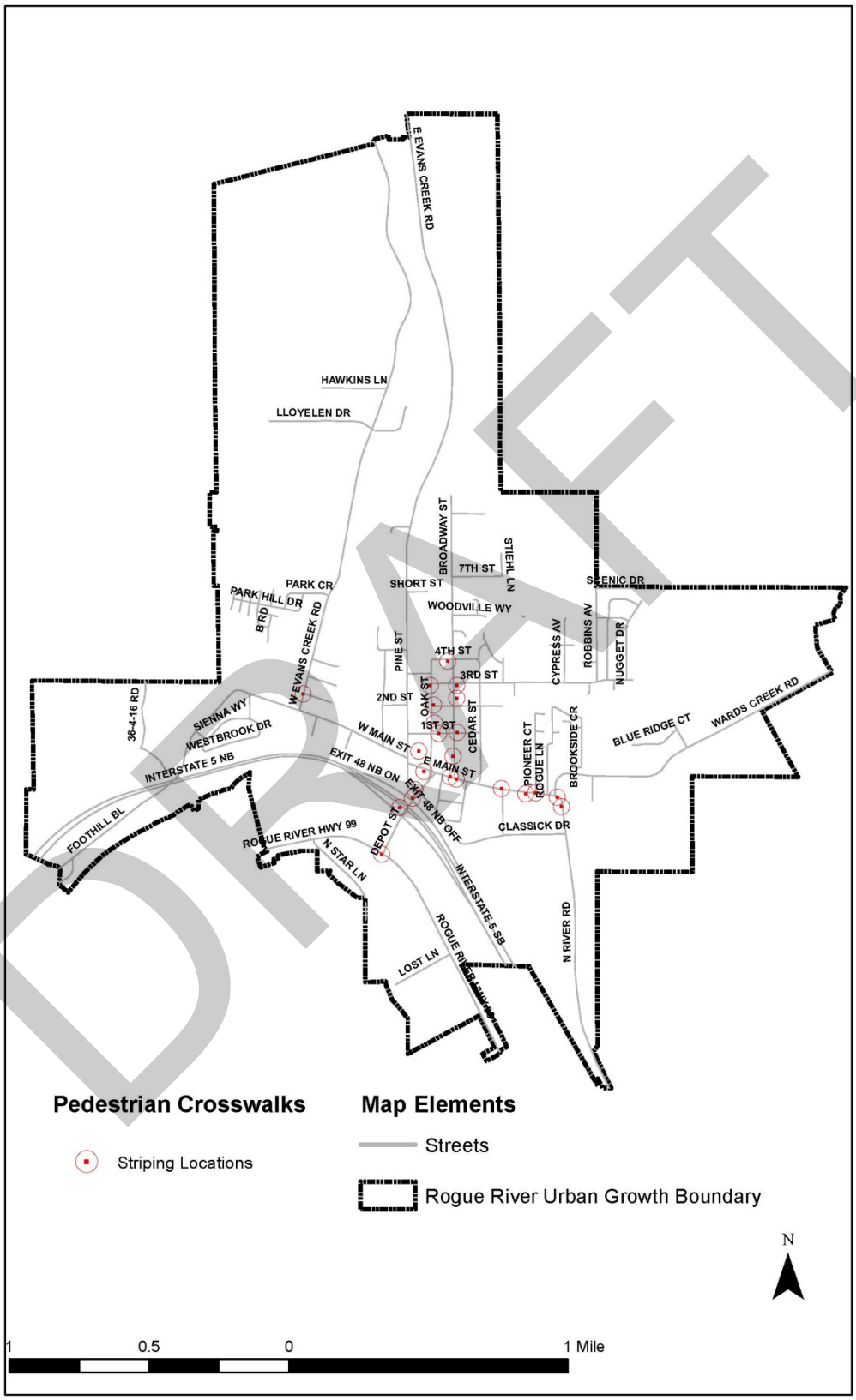
Rogue River TPAU Bike Facility Type and Lane Width



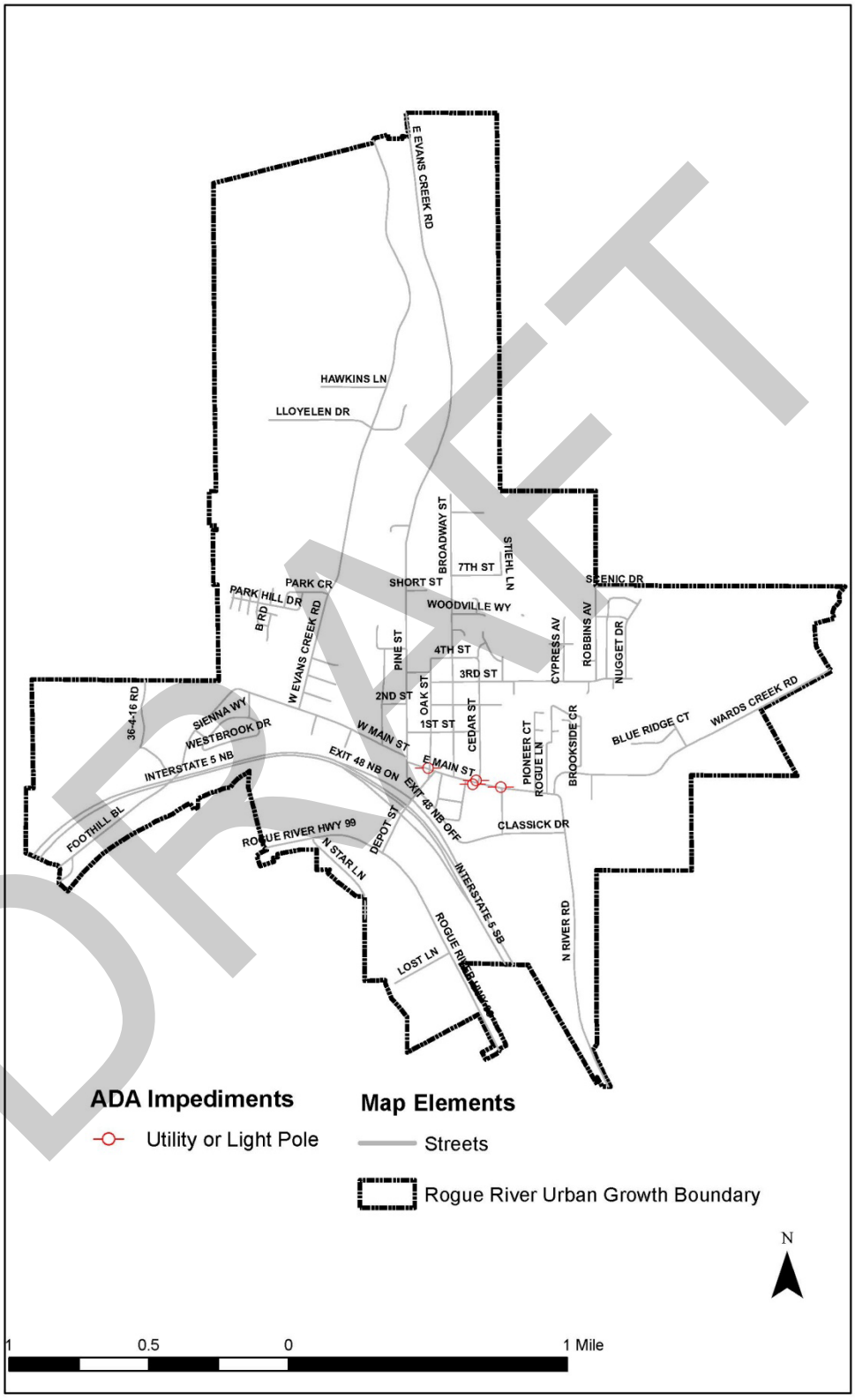
Rogue River TPAU Sidewalk Presence and Width



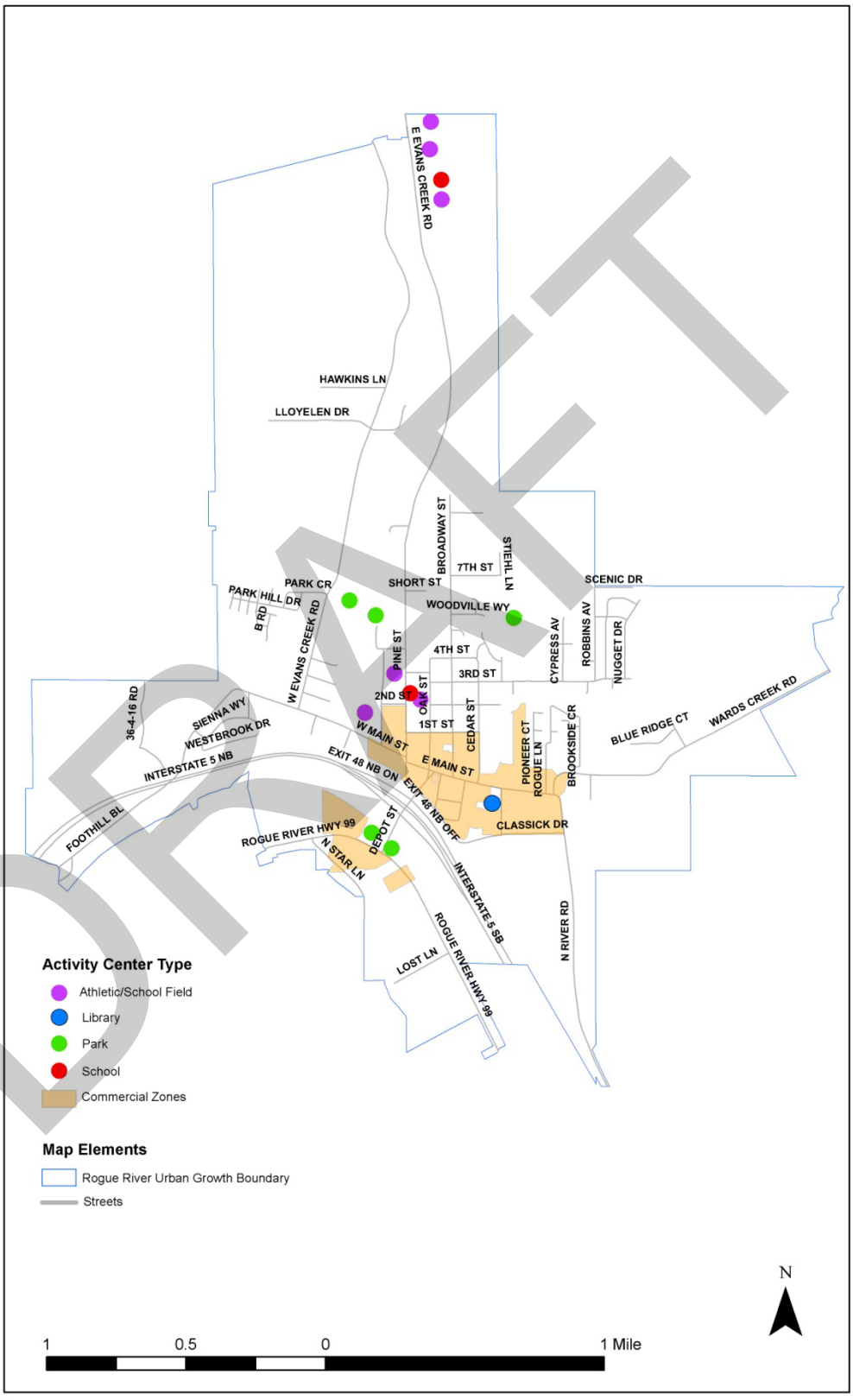
Rogue River Pedestrian Crosswalks



Rogue River ADA Impediments



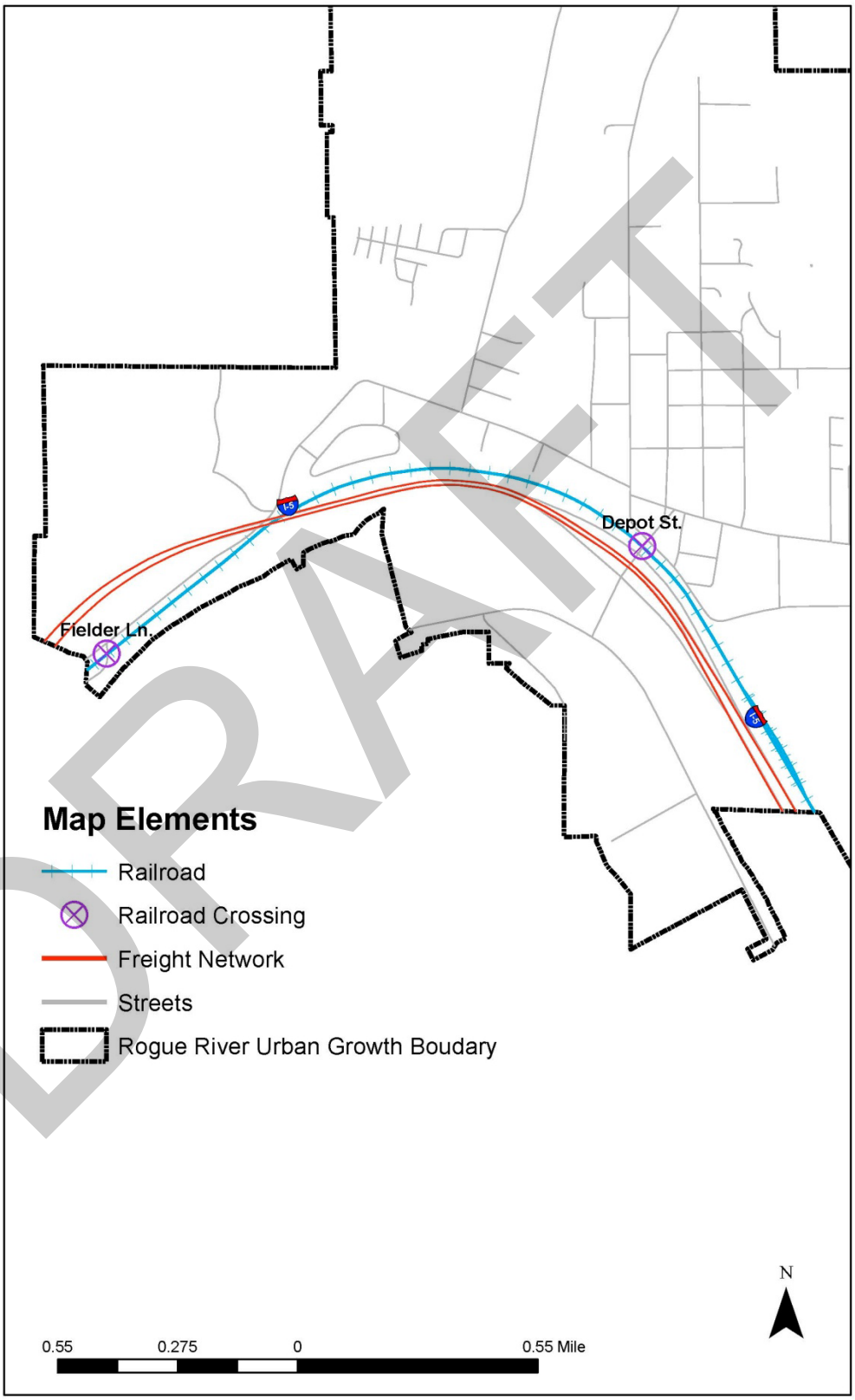
Rogue River Activity Centers



Rail Network

The Central Oregon Pacific Railroad passes through Rogue River, essentially paralleling Interstate 5. An at-grade crossing exists at Depot Street immediately north of the freeway interchange, creating one of Rogue River's most significant transportation issues. A second crossing is at Fielder Lane, near the western edge of the urban growth boundary and not currently in the city.

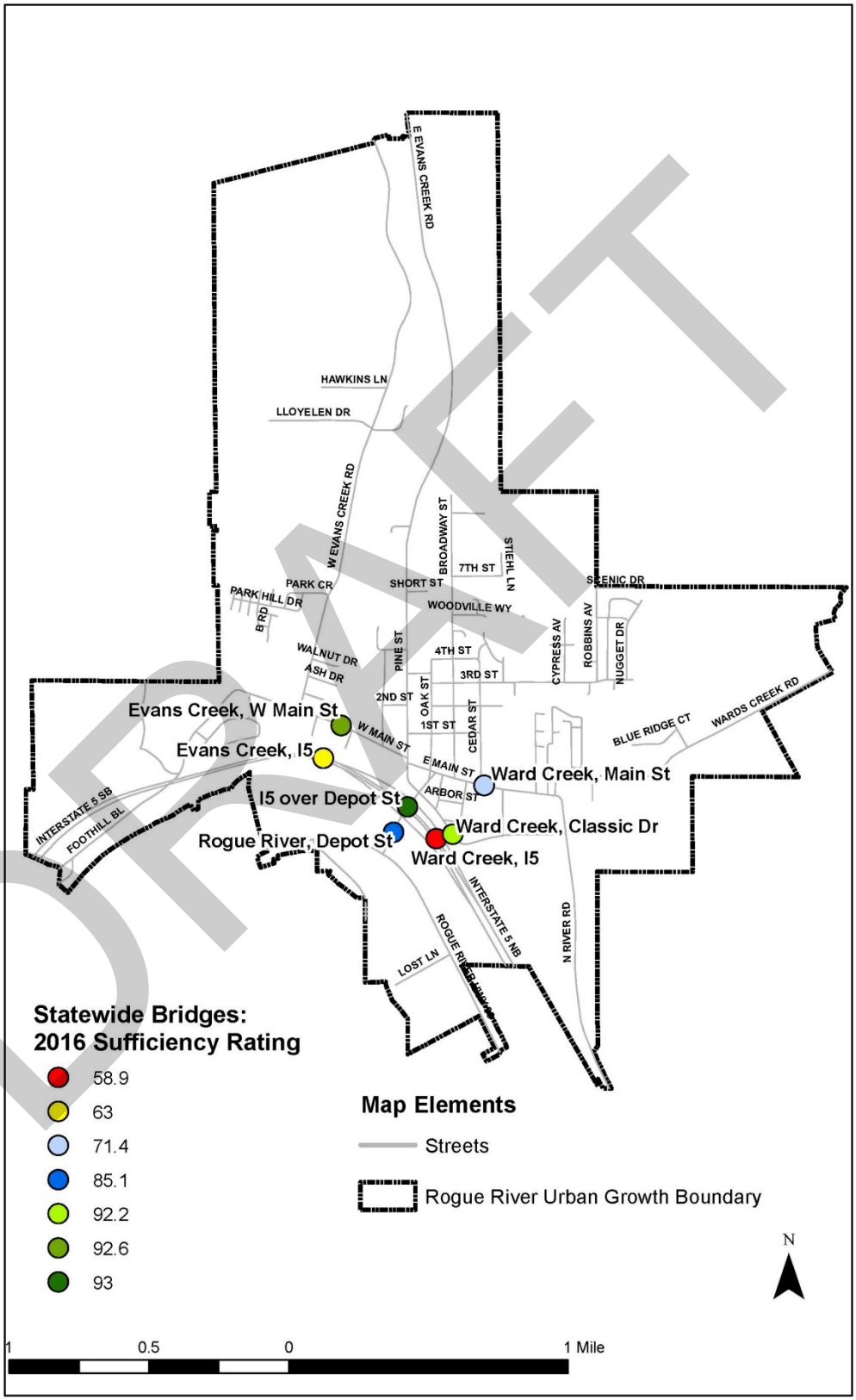
Rogue River Rail Network, Rail Crossing Locations, & Freight Network



Bridges

The following map shows the location and rating of each public bridge in the city. The rating system depicted on the map has been revised but is not available for mapping purposes. All bridges are within acceptable limits, but those with the highest numbers are the best quality.

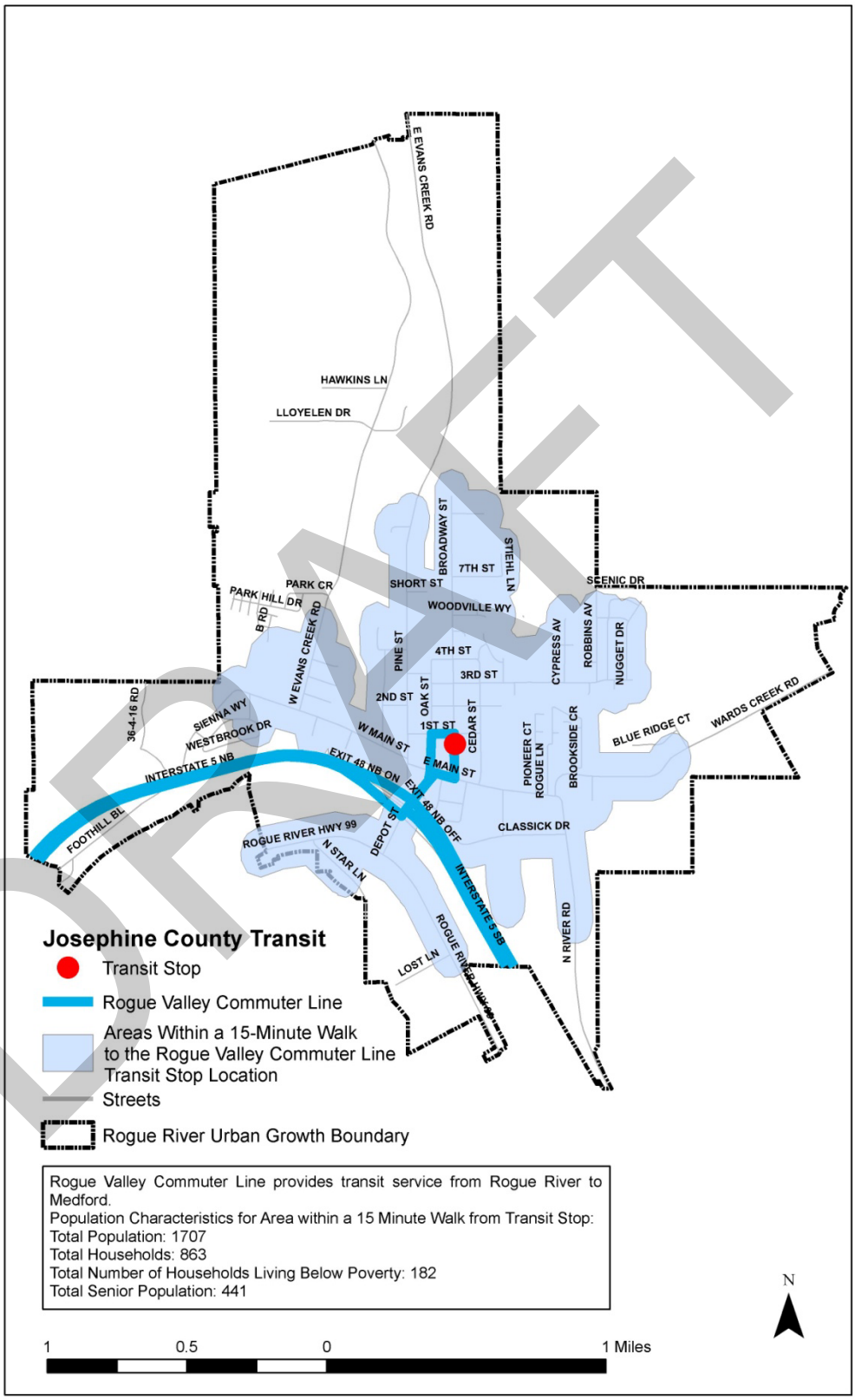
Rogue River Bridges and Culverts on Major Roadways



Transit

Josephine Community Transit (JCT) provides commuter service Monday through Friday in the form of the Rogue Valley Commuter Line (RVCL). RVCL service includes two morning trips, two afternoon trips, and one mid-day trip between Grants Pass and Medford, with stops in Rogue River and Gold Hill. RVCL connects in Medford with the Southwest POINT, a daily intercity service between Brookings and Klamath Falls. The map identifies areas within a 15-minute walk of the bus stop.

Rogue River Public Transportation Service and Stop



Natural Resources and Environmental Barriers

The following maps depict

- Federal Emergency Management Agency floodplains
- Wetlands
- Threatened and Endangered Species
- Rogue River cultural sites
- Steep slopes

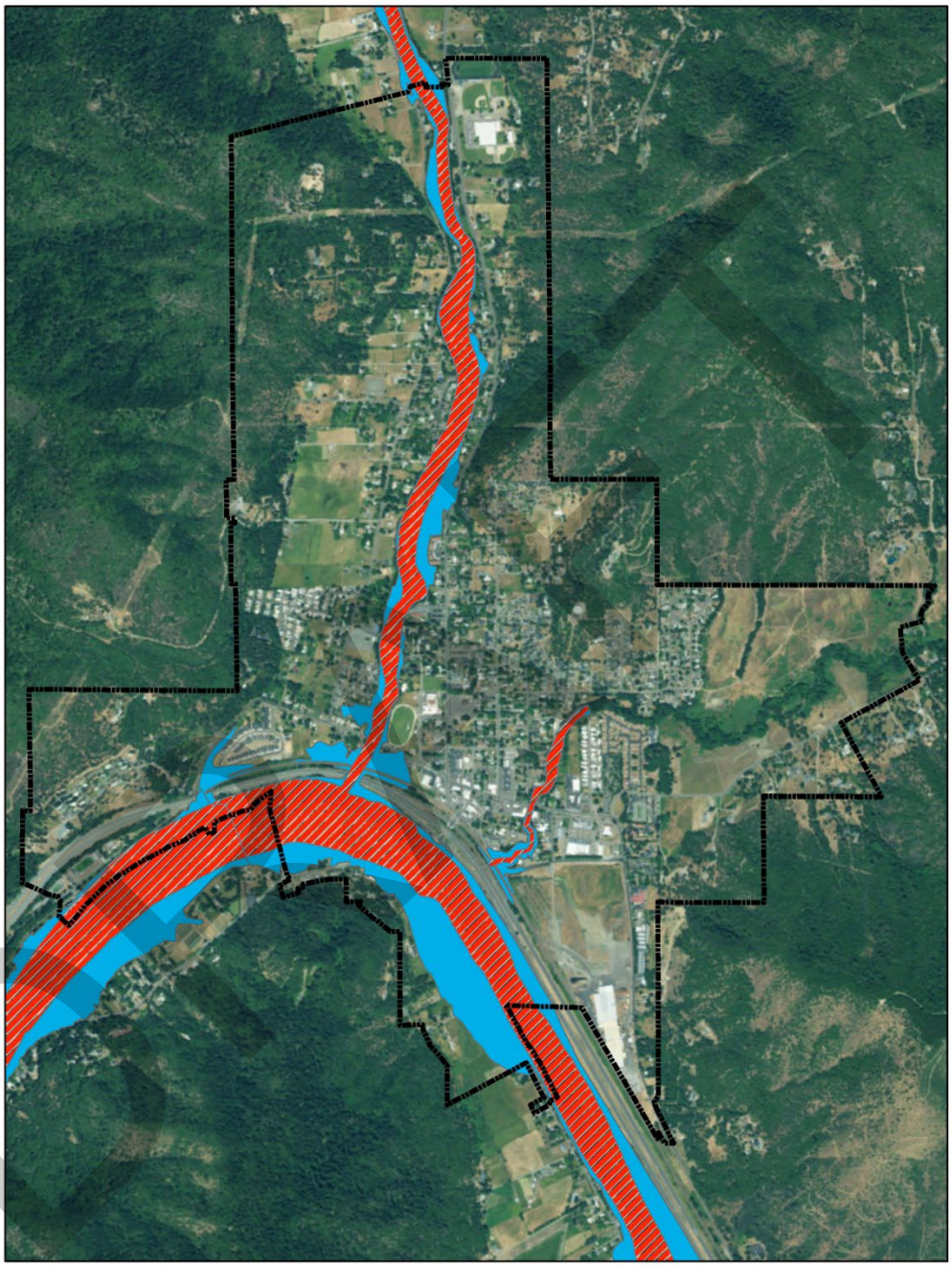
Floodways and floodplains exist along the Rogue River, Evans Creek, and Ward Creek. The Rogue River floodway significantly reduces the developable area between the River and Highway 99 (Rogue River Highway), much of which is zoned commercial. The creeks have less effect on lands uses, and will be a factor in transportation planning primarily if new stream crossings are proposed. These streams are identified as the only portions of the city that contain threatened and endangered species, providing habitat for steelhead, coho salmon, and/or Chinook salmon.

Nearly all wetlands in Rogue River are riverine wetlands associated with the above-mentioned streams and smaller drainageways and ditches. One emergent wetland exists just north of the river, but also will not be a factor in future transportation planning.

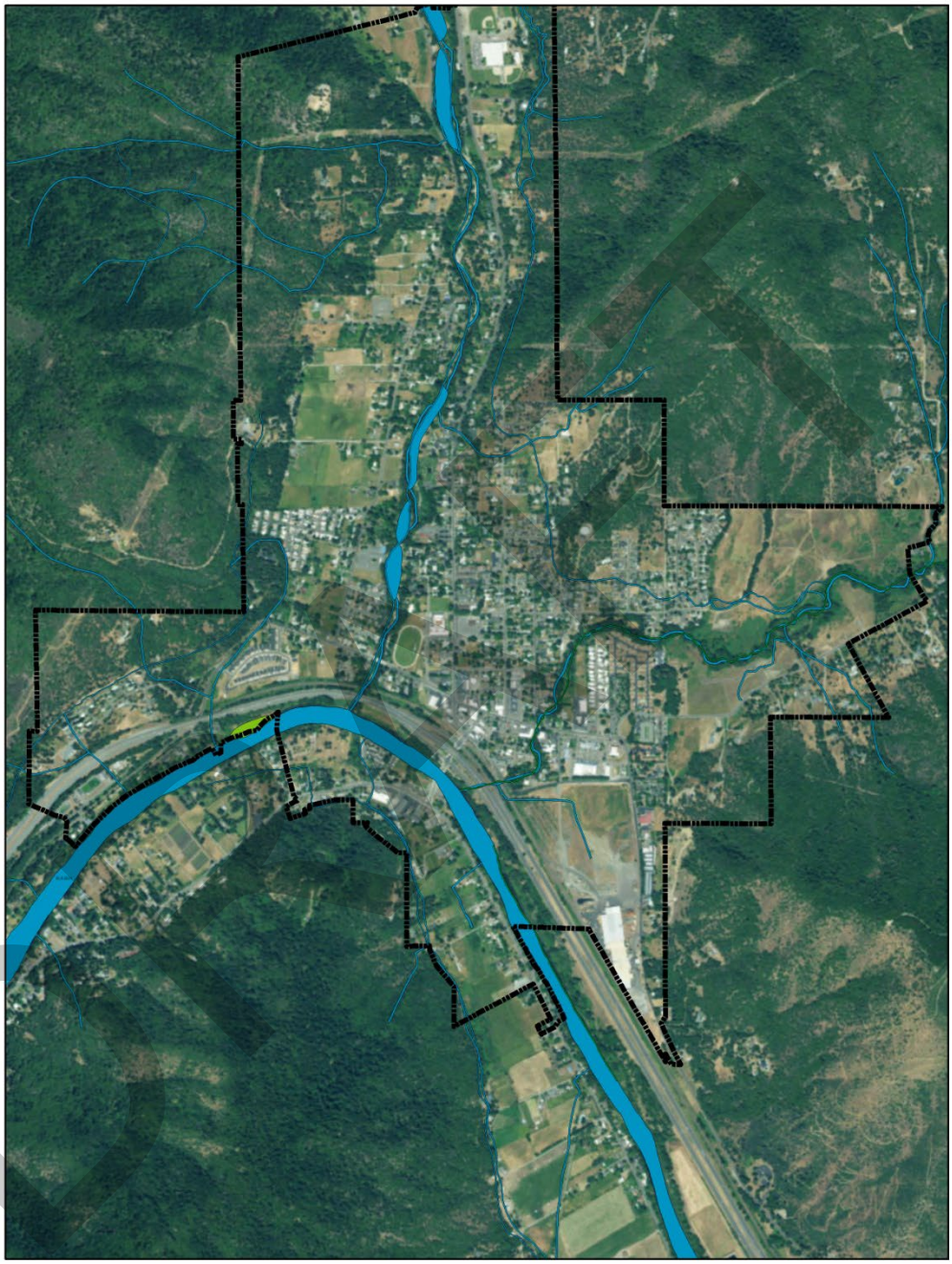
Five properties contain historic resources, four of which are south of the river. The Woodville Museum is the only site north of the river.

A slope map vividly illustrates slopes throughout the area within the urban growth boundary. The areas in dark blue represent slopes of 25 percent or greater. Most of these areas are at the fringe of the boundary and should not significantly affect transportation improvement decisions, but may influence location of local streets.

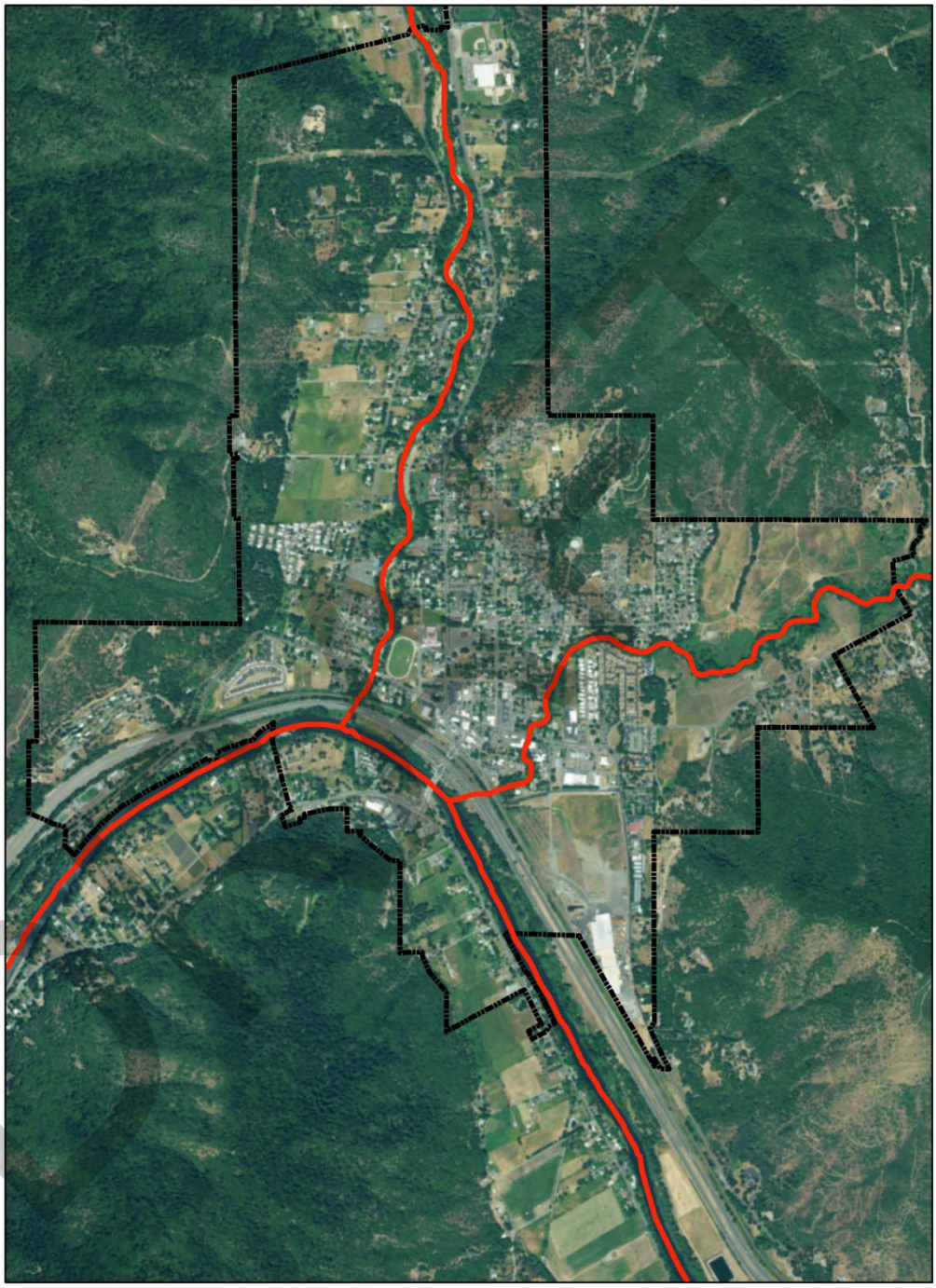
Rogue River FEMA Classifications



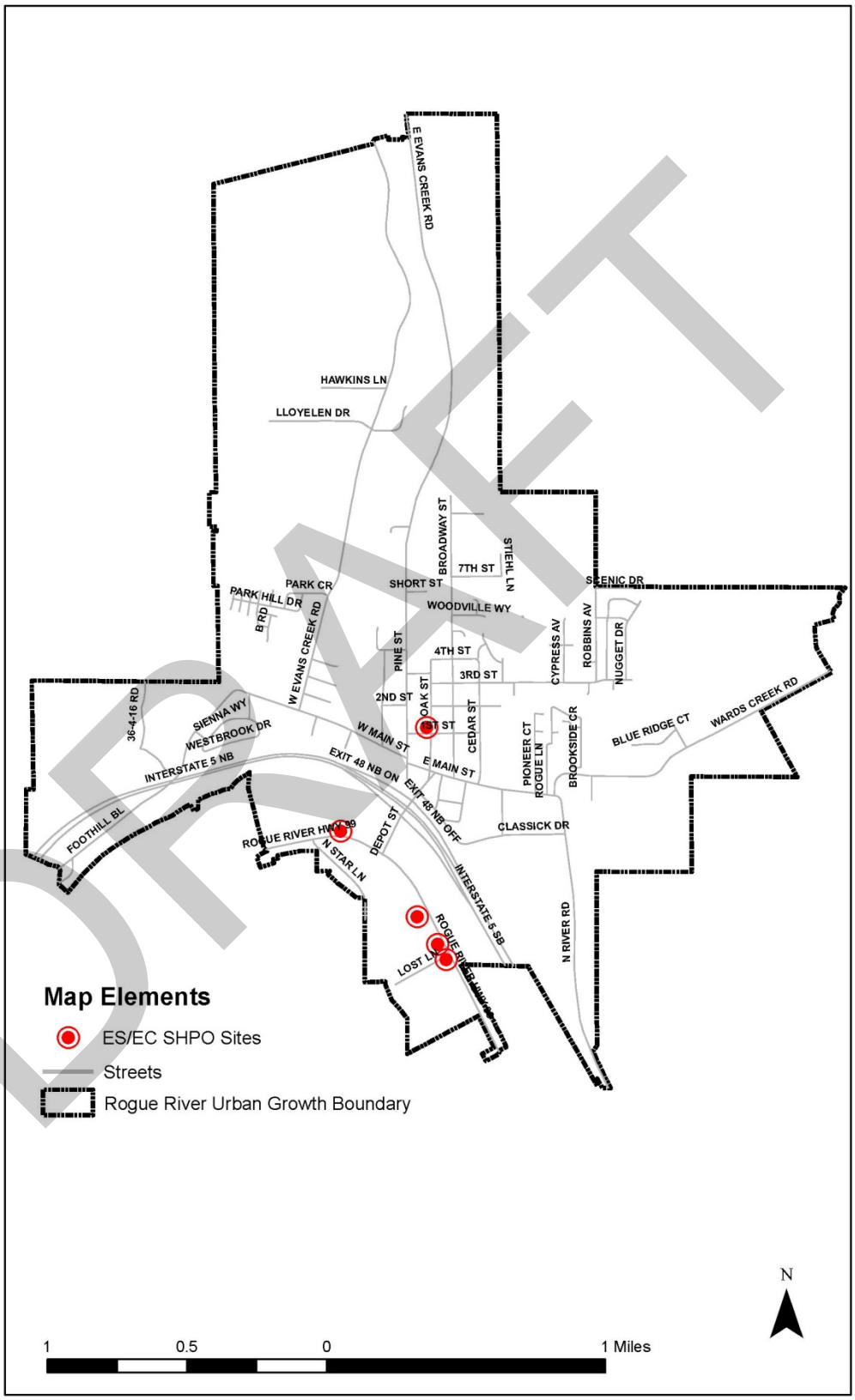
Rogue River National Wetlands Inventory



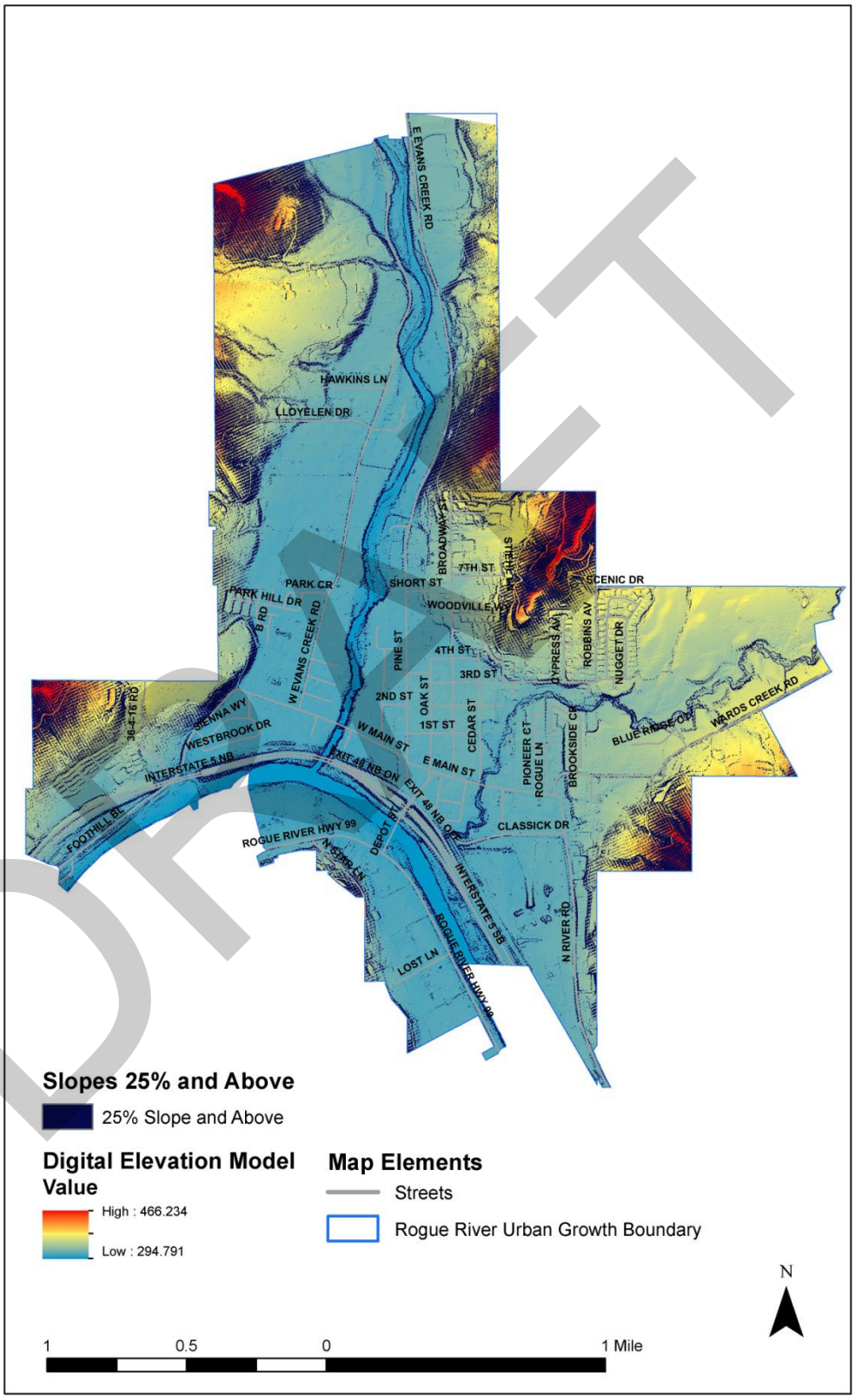
Rogue River Wildlife Considerations



Rogue River Cultural Resources



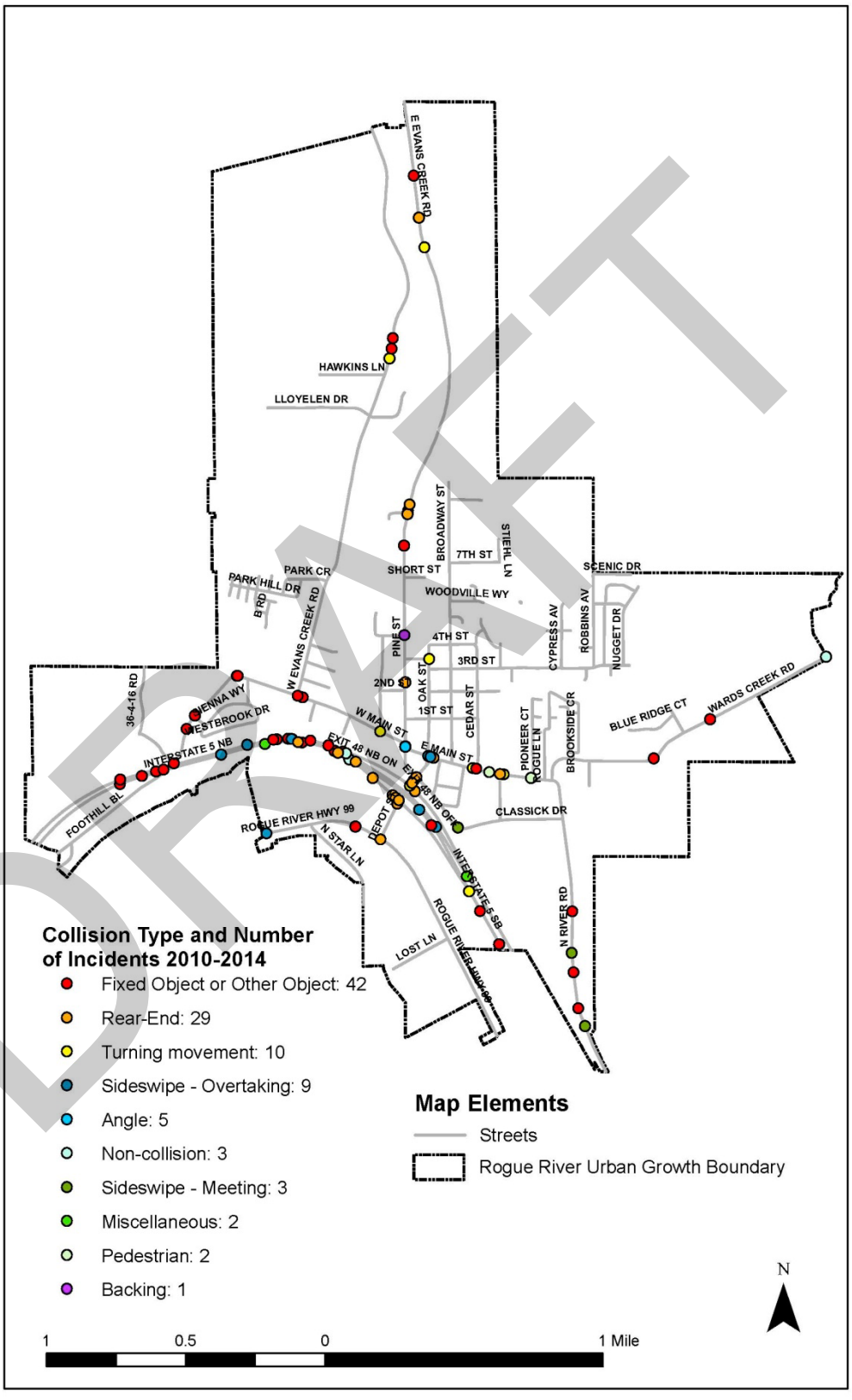
Rogue River Slopes Over 25%



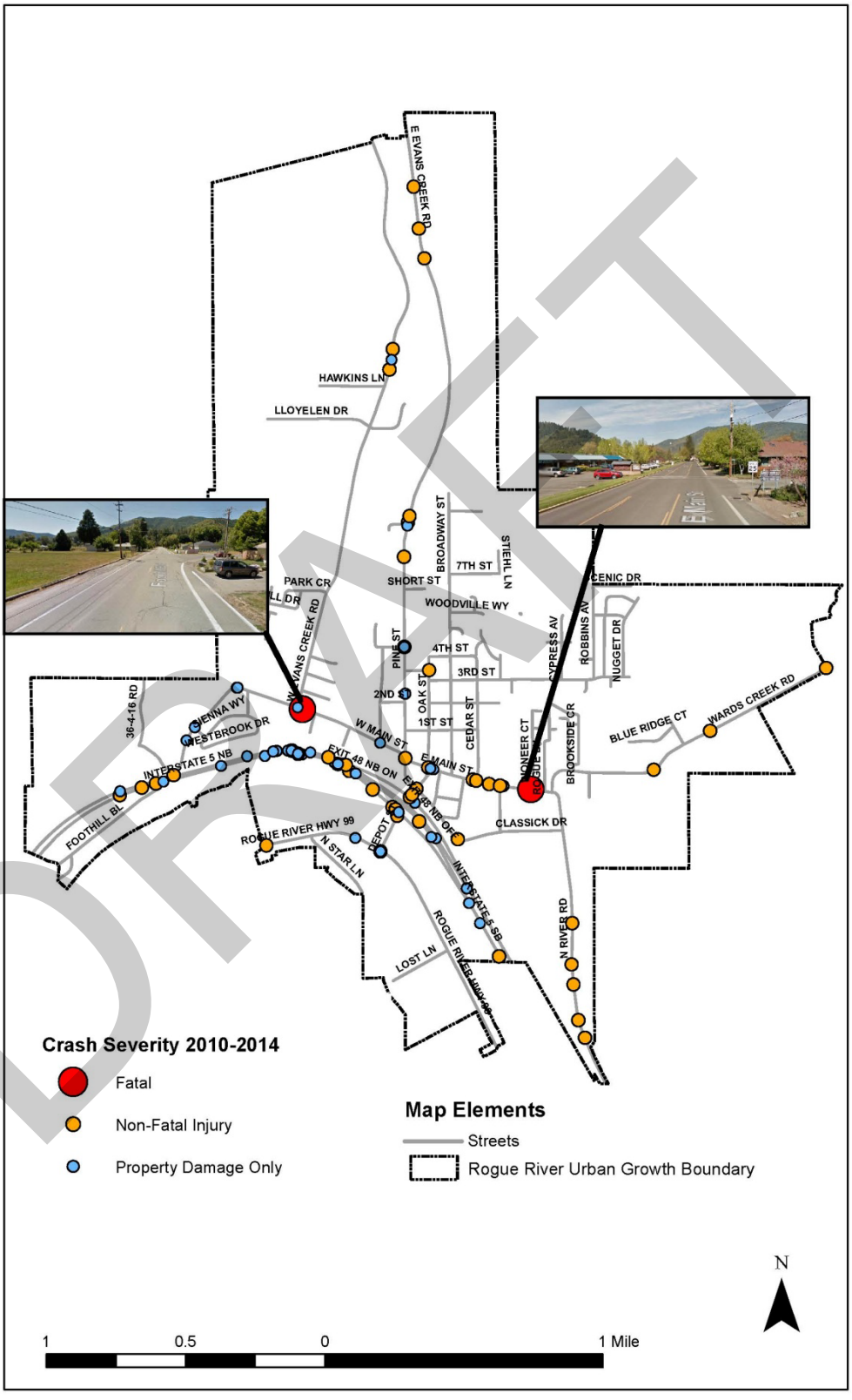
Safety

The final set of maps shows location, cause, and severity of crashes from 2010 to 2014, as well those that involved drug or alcohol impairment. Many of the crashes were on the freeway. The highest incidence of crashes resulted from striking fixed or other objects, and the second highest cause was rear-end crashes.

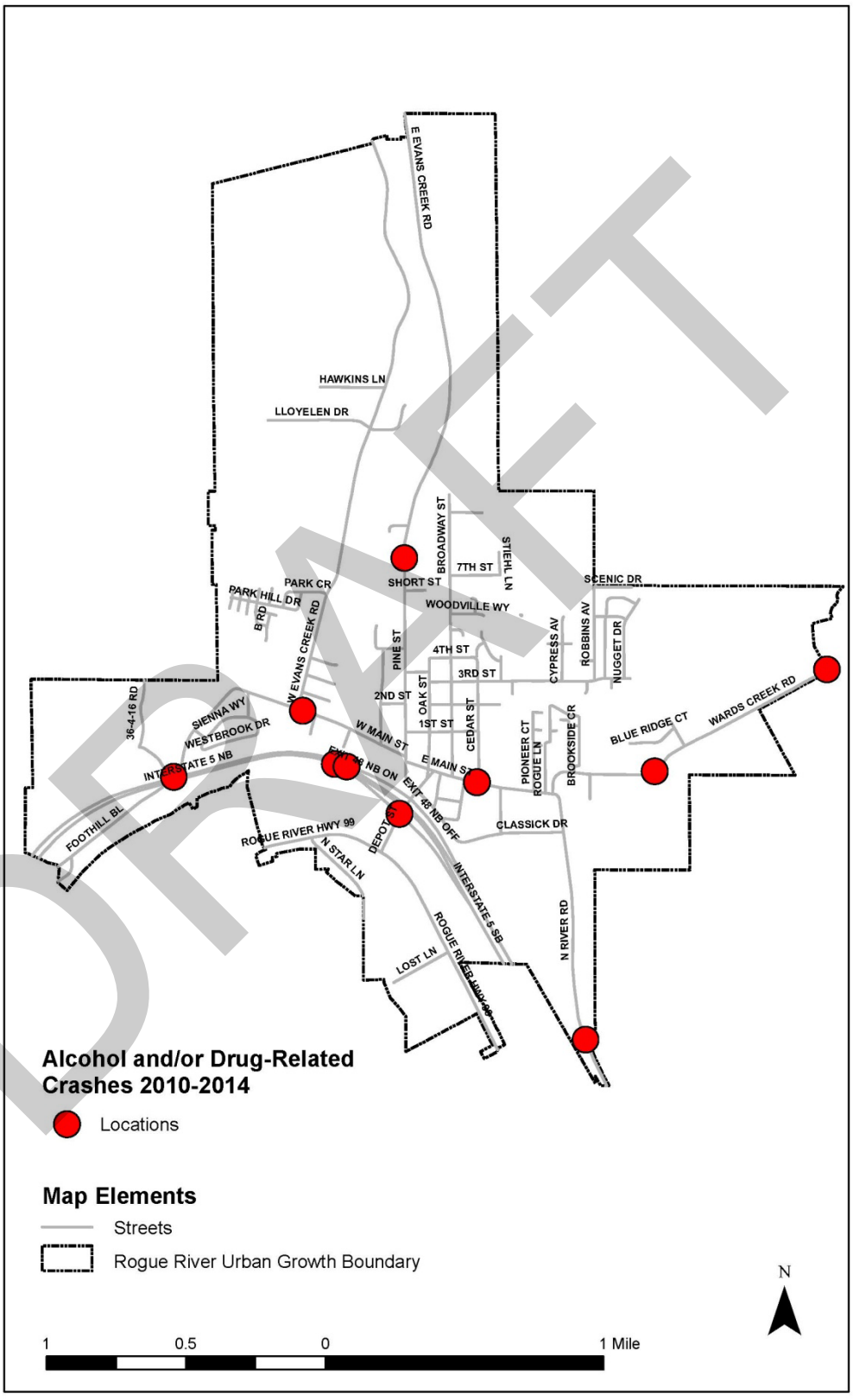
Rogue River Crashes by First Collision CauseType



Rogue River Crashes: Severity



Rogue River Crashes by Alcohol and/or Drug Involvment



Section 3 – Future Land Uses

Overview

The purpose of this chapter is to analyze future land uses for the planning horizon (2040), accounting for projected population and employment changes, City plans, and direction from the City. It will include land use assumptions, including type, density, and projected traffic generation.

Population Projections

The US Census numbered 2,140 residents in 2010, increasing 15.6 percent from 1,851 in 2000. This was a much more rapid rate than the 5.2 percent increase from 1990 to 2000. Jackson County grew 14.6 percent from 2000 to 2010 after a 23.8 percent increase the previous decade. The most recent population estimate provided by Portland State University's Center for Population Research is for July 2016. Rogue River added 60 residents since 2000, a 2.8 percent increase, while Jackson County added 2.2 percent to its population.

The Center for Population Research now provides official population projections in addition to its longstanding responsibility for annual population estimates. The estimates include all the area within each city's urban growth boundary, which accounts for the larger population in 2015 than Rogue River's 2016 population estimate that reflects the area only within the city limits. The 2040 population is 40 percent higher than in 2015, compared to 25.3 percent for the county.

2015	2,838
2020	2,938
2025	3,158
2030	3,421
2035	3,705
2040	3,975

Table 1 – Percent Population Increase

	1990-2000	2000-2010	2010-2016	2016-2040
Rogue River	5.2	15.6	2.8	40.0
Jackson County	23.8	14.6	2.2	25.3

Source: PSU Center for Population Research

The table demonstrates that Rogue River and Jackson County have grown at differing rates, with the city growing more slowly from 1990 to 2000, but at a very similar rate since 2000. The city is projected to grow at a significantly faster rate than the county through 2040, which is typical of small jurisdictions compared with larger jurisdictions. The Portland State University forecasts also stated that the "annual housing unit growth rate is assumed to rapidly increase during the initial years of the forecast period and then decrease slightly and remain at this level through the remainder of the forecast period. The occupancy rate is assumed to slightly decrease over the forecast period, starting from the rate observed in 2010. Average household size is assumed to remain at about two persons per household over the forecast period. Group quarters population is assumed to stay relatively steady over the forecast period."

The 2010 census reported Rogue River's household size at 2.02 persons per household. To accommodate a population growth of 1,137, around 563 housing units will be needed. Current zoning permits 20,000 square foot parcels in the R-E zone, 8,000 and 12,000 square foot parcels in the R-1 zone, and multiple housing units in the R-2 zone. Rogue River does not have an R-3 zone, but permits up to 20 units in the R-2 zone. The 2011-2105 American Community Survey estimated the mix of housing to be 50 percent single-family, 36 percent multiple-family, and 14 percent manufactured dwellings. The ACS does not identify how many manufactured dwellings are in mobile home parks, but two mobile home parks and one RV park appear to accommodate a majority of the units. Although much of the area surrounding the downtown core contains single-family dwellings, it is zoned for multi-family development. Using the current mix of housing, approximately 568 single-family units and 409 multiple-family units will be added. Given current trends, it is less likely that there will be 160 new manufactured dwellings, and more likely that, because it is generally more affordable, multiple unit housing will accommodate a majority of those who would be occupying manufactured dwellings.

Employment Projections

The PSU Population Research Center also provides employment projections in coordination with the Oregon Employment Department. In 2015, PSU estimated there were 241 industrial employees and 575 commercial employees. Commercial employment includes office and public uses, not just retail.

Oregon Administrative Rule (OAR) Division 38 includes standards for simplified urban growth boundary amendments. The Transportation System Plan update is not a UGB amendment, but the information in the OAR cites Oregon Employment Department regional long-term employment projections from 2015 through 2029. For the Rogue Valley, commercial growth is expected to grow by 13 percent and industrial growth by 12 percent in the 14-year period. Lacking any other more specific local projections, extending the Employment Department projections to 2040 would result in a total of approximately 707 commercial employees and 292 industrial employees. This represents an equal distribution of employment throughout Jackson County, which does not account for the location of a majority of land zoned for employment uses near Medford and White City. Many Rogue River residents work in or near Medford and Grants Pass.

There are no immediate plans for large commercial uses or industrial firms to locate in Rogue River. Commercial land north of the river is either commercially developed or contains residences, significantly reducing opportunities for commercial development unless residential parcels are converted to commercial use. Most available land long-term is in the urban growth boundary south of the river and will need to be annexed before it can accommodate commercial uses. All of the area between Rogue River Highway and the river is in the floodplain, and most of it is designated floodway, which essentially prevents new development. The area south of the city limits contains the most land for new commercial development, but its cohesiveness is hampered by the high number of ownerships. The largest area in single ownership appears to be about 7.75 acres.

Two areas are designated for industrial uses, including the land between Classick Drive and the Murphy Company Mill, and an area south of Rogue River Highway within the Urban Growth Boundary but outside of the existing city limits. It includes about 30 acres on multiple parcels

with more than a dozen owners, reducing the likelihood that larger employers would locate there, particularly within the TSP planning period. A small portion east of North River Road at the southern tip of the UGB but outside the city limits is also planned for industrial use. No other areas in the UGB are shown as employment lands on the comprehensive plan, except for the existing Rogue River High School at the north end of the UGB.

Given the land use pattern and the City's conservative approach to expanding its city limits, the likelihood of significant employment growth in the planning period is relatively low. Any industrial growth most likely would be confined to Classick Drive and North River Road.

Section 4 – Existing Conditions

Overview

The purpose of this memo is to update the existing conditions of Rogue River's Transportation System Plan. This will provide an overview of the current transportation system operations and deficiencies within the city.

The current transportation system operations analysis identifies how the study area's transportation system operates today. This analysis includes an evaluation of traffic operations at the study intersections, including non-motorized (pedestrian and bicycle) movements. The results of this analysis will be used to identify existing transportation system needs at the study intersections for motorized and non-motorized travel modes.

In the 2016 existing conditions analysis, there were no intersections exceeding applicable volume-to-capacity (v/c) targets or standards. There are queuing and safety related issues on Depot Street in the interchange area. There are also potential safety concerns at the Main & Pine Street intersection and on North River Road south of Classick Drive, but crash rate thresholds have not yet been reached. The rest of the concerns are a lack of official bicycle facilities, inconsistent sidewalks, and infrequent transit.

Background

The City of Rogue River is in Jackson County along IS and OR99 and is part of the Middle Rogue Metropolitan Planning Organization (MRMPO). In July 1, 2011 the population was 2,140. This city has grown to the south beyond the significant barriers of railroad tracks, an interstate, and a river. The IS/Depot Street interchange is jammed in between the Central Oregon and Pacific railroad tracks and the Rogue River which becomes a series of difficult to cross barriers in very close proximity to each other. This leads to traffic operations issues and problems in future planning.

The City has developed from south of the Rogue River and stretched north beyond the city limits to build the high school on East Evans Creek Road. The main street of the community is the east/west oriented Foothill Boulevard/E Main Street/W Main Street. This is connected to I5 and OR99 by way of Depot Street.

Evaluation Criteria and Analysis

The intersection operations analysis results were compared to operational standards and targets used by the County and ODOT to assess performance and potential areas for improvement. The City appears not to have its own traffic operational standard, so a v/c ratio of 0.95 was used which is equivalent to both a state district-level highway v/c target in the Oregon Highway Plan (OHP) and Jackson County's inside-MPO standard. Jackson County and ODOT use volume/capacity (v/c) ratios, which compare the volume of traffic entering an intersection to the theoretical capacity of the intersection to accommodate traffic. A v/c ratio of 1.0 indicates that an intersection is operating at capacity while a v/c ratio over 1.0 indicates that the intersection's capacity is exceeded.

The 1999 OHP mobility standards (amended in 2011) were used to evaluate v/c ratios for state highways in an MPO. Under the OHP, the maximum acceptable v/c ratio for I5 and the interchange

ramp terminals is 0.85 and 0.95 for OR99. Jackson County uses v/c standard of 0.95 for intersections within an MPO.

The intersection operations analysis was conducted using SIDRA Version 7 software, with Highway Capacity Manual (HCM) 2010 methodologies. Signalized intersection v/c's were manually calculated using the critical volume to capacity ratio process described in HCM 2010. The I5 mainline segments and merge/diverge areas were analyzed with HCS 2010. Queuing was developed using the SIDRA software. Appendix A shows the overall methodology to be used for the existing/future conditions and the alternatives.

Counts Taken

Classification (trucks, pedestrian and bicycles) traffic counts of varying durations were taken midweek in September 2016 at the below locations. These counts were taken after school was back in session.

16-hour classification (All vehicle classes & pedestrian/bicycle)

- Depot Street @ Highway 99
- Depot Street @ I-5 Southbound Ramp Terminal
- Depot Street @ I-5 Northbound Ramp Terminal

4-hour (2-6 PM) classification (All vehicle classes & pedestrian/bicycle)

- E. Main Street @ Wards Creek Road
- Foothill Boulevard @ W. Evans Creek Road
- E. Main Street / W. Main Street @ Pine Street
- N. River Road @ Classick Drive
- Depot Street @ Classick Drive / Pine Street

4-hour (2-6 PM) volume & pedestrian/bicycle classification only

- E. Main Street @ Broadway Street
- E. Main Street @ Cedar Street
- Depot Street / Oak Street @ E. Main Street

48-hour volume-only tube counts

- River Road, 0.65 mile east of Classick Drive
- Wards Creek Road, 0.02 mile east of Cluster Drive
- Foothill Boulevard at I-5 overcrossing
- Pine Street, 0.25 mile north of Creek View Lane
- W. Evans Creek Road, 0.02 mile north of Park Circle

Volume Development

The transportation and traffic analysis was based on the existing year 2016 30th highest hour conditions. The counts were reviewed to identify the peak periods to determine individual intersection and system peak hours for the operational analysis.

These counts were seasonally adjusted to the peak month using ODOT's Seasonal Trend Tables. The adjusted volumes were rounded and balanced between the intersections as needed. The system peak hour was determined to be 3:30 to 4:30 pm. See Appendix B for the 2016 30th highest hour

volumes and lane configuration figures and the volume development worksheets.

Raw traffic counts should not be used alone for operational analysis. These counts should be taken as close to the peak month as possible. The peak hour is converted to a 30th highest volume by applying a seasonal factor. The 30th highest volume is then used for analysis purposes. The 30th highest hour is a transportation industry standard that represents traffic conditions that might occur during the worst evening commute in a month. Hours higher than the 30th highest hour typically surround the holidays, like the day after Thanksgiving.

Compare the 30th highest hour standard to purchasing a coat. For an outrageous cost, a waterproof coat would ensure staying dry for every hour of the year. On the other extreme, a cheap coat may allow getting soaked most rainy hours of the year. A water-resistant coat may serve the best benefit, for the economic cost. It is not worth the excessive money to avoid getting a little wet some 20 hours during the year.

2016 Existing Conditions Analysis Results

Preliminary Signal Warrants

Preliminary Signal Warrants (PSW) were evaluated to determine if study area intersections were eligible for potential traffic control changes including signalization, roundabouts, etc. ODOT's Preliminary Signal Warrants (PSW) are based on Manual of Uniform Traffic Control Devices (MUTCD) Warrant 1 (Case A and B). Case A and B deal primarily with high volumes on the minor street and high volumes on the major street, respectively. Meeting preliminary signal warrants does not guarantee that a signal (or other change) will be installed. An intersection traffic control study would need to be undertaken by the appropriate jurisdiction weighing the costs and benefits of such a

change. For example, traffic signals can degrade the previously non-stopped major roadway while enhancing the minor street operation. A traffic signal may introduce safety hazards that outweigh the benefits of a signal, which may not address hazards and safety issues specific to this location. For ODOT's jurisdiction, traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway. None of the unsignalized intersections in the study area met PSW's for 2016.

Volume to Capacity ratio, Level of Service, and 95th Percentile Queues

For 2016, the existing volumes were evaluated to describe the base traffic operating conditions. Table 1 summarizes the respective v/c ratio for the project area intersections; none are beyond the maximum allowable v/c ratio (0.85 or 0.95 for OHP) or the 0.95 level for the City jurisdiction in 2016. For additional information on the intersection operation, the applicable delay-based LOS is shown. The Depot and Pine Street intersection does not have a LOS as three-way stops are not applicable in the HCM LOS methodology. Table 2 shows the v/c for mainline I5 and the merge and diverge areas of the ramps. No locations were over the 0.85 maximum OHP v/c target. Analysis worksheets are shown in Appendix C.

In addition to v/c ratios and LOS, 95th percentile queue lengths were analyzed to better understand the system operation. Excessively long queue lengths are often seen in areas where v/c ratios exceed standards.

Figure 1: 95th Percentile Queues

The 95th percentile queue lengths showed no extensively long queues. The longest queues were along Depot Street in the interchange area as shown in Figure 1 as the queues extend between and through both ramp terminals which is a concern. Visual observation in the peak hour correlated well with the reported queues. The reported distance of 325 feet could represent thirteen cars. There are five closely spaced public intersections on Depot Street (OR99, SB interchange ramp terminal, NB interchange ramp terminal, Pine Street, and East Main Street). The spacing of these streets as well as alleys and the railroad crossing creates areas where driver decision points and turn movement conflicts overlap.

The intersection of Depot Street at Pine Street is a concern as it is less than 150 feet north of the NB I5 intersection with railroad tracks in between. This results in virtually no space to store vehicles waiting at the NB ramp terminal intersection. One short vehicle can fit between the intersection stop-bar and the railroad tracks and the rest have to queue on the eastbound Pine Street, southbound Depot Street or westbound Classick Drive approaches.

Table 1: 2016 V/C Ratios, LOS, and 95th Percentile Queues

Intersection	LOS	Highest Movement[1]	V/C Ratio	Queue[2] (ft)	Agency	Standard
Depot St at Pine St	N/A[3]	EB	0.45	125	City	0.95
Depot St and I5 NB	B[3]	SB	0.65	**325**	ODOT	0.85
Depot St and I5 SB	C[3]	NB	0.65	**300**	ODOT	0.85
Depot St and OR99	B	SB	0.51	75	ODOT	0.85
Depot St and Main St	C	NB	0.26	50	City	0.95
Main St and Wards Creek Rd	C	SB	0.08	< 50	City	0.95
Main St and Cedar St	C	SB	0.21	< 50	City	0.95
Main St and Broadway St	C	SB	0.24	< 50	City	0.95
Foothill Blvd and W Evans Creek Rd	B	SB	0.18	< 50	City	0.95
Main St and Pine St	B	EB	0.51	50	City	0.95
N River Rd and Classick Dr	C	EB	0.08	< 50	City	0.95

[1] The Highest Movement describes queues

[2] Cells shaded black represent queues that block other intersections.

[3] The operation of these intersections is essentially LOS F due to the queuing which extends between them and forces vehicles to wait more than one cycle to clear.

The constrained interchange section also can cause a number of operational issues. Any kind of incident on Depot Street or even when a train is crossing can quickly create congestion which can back onto the ramps and out onto the I5 mainline. Queuing that extends out onto the deceleration portion of the ramp or out onto the mainline is an inherent safety issue. The southbound off-ramp is likely to have this problem more often than in the northbound direction. Also, the geometry of the southbound ramp terminal intersection is tight enough that trucks trying to turn left to go into downtown can interfere with vehicles waiting in the left turn lane to head south on I5.

Table 2: Mainline & Merge/Diverge v/c for I5 at Rogue River Interchange

Section	V/C
NB north of interchange	0.52
SB north of interchange	0.46
NB Diverge from I5	0.51
SB Diverge from I5	0.50
NB between ramps	0.39
SB between ramps	0.36
NB Merge onto I5	0.54
SB Merge onto I5	0.56
NB south of interchange	0.47
SB south of interchange	0.54

Non-Motorized Operations

The traffic counts included the total number of pedestrians and bicyclists that entered the study intersections during the evening (3:00 to 5:00 p.m.) peak time periods. Tables 3 and 4 summarize the pedestrian and bicycle movements. The traffic counts indicate a base level of use on the pedestrian and bicycle system throughout the City even in the highest vehicular volume areas. It will be important to maintain and encourage growth of mobility for all users within the City into the future.

Table 3: Pedestrian Crossings

Intersection	Pedestrian Crossings 3-5PM peak period			
	North	East	South	West
Depot St at Pine St	0	3	0	2
Depot St and I5 NB	1	7	0	7
Depot St and I5 SB	2	4	3	6
Depot St and OR99	0	1	2	2
Depot Stand Main St	8	5	6	34
Main St and Wards Creek Rd	3	0	N/A	2
Main St and Cedar St	26	12	N/A	2
Main St and Broadway St	10	3	N/A	10
Foothill Blvd and W Evans Creek Rd	4	11	N/A	0
Main St and Pine St	10	9	28	14
N River Rd and Classick Dr	4	N/A	0	0

Table 4: Bicycle Movements

Intersection	Bicycles Entering Volumes 3-5PM peak period			
	North	East	South	West
Depot St at Pine St	0	0	3	1
Depot St and I5 NB	1	0	3	N/A
Depot St and I5 SB	1	N/A	3	0
Depot St and OR99	8	3	0	0
Depot St and Main St	0	0	1	1
Main St and Wards Creek Rd	1	0	N/A	1
Main St and Cedar St	No Data	No Data	N/A	No Data
Main St and Broadway St	0	1	N/A	2
Foothill Blvd and W Evans Creek Rd	2	0	N/A	1
Main St and Pine St	0	0	0	1
N River Rd and Classick Dr	0	N/A	0	0

Bicycle Level of Traffic Stress (LTS)

The Level of Traffic Stress (LTS) is ODOT's methodology described in the Analysis Procedures Manual (APM), Chapter 14. The methodology quantifies the perceived safety of being in close proximity with vehicles, considering both speed and separation.

In the Bicycle LTS, road segments are classified into one of four levels of traffic stress (see Table 5) based on the anticipated user comfort. This categorization of cyclist types is commonly accepted throughout the bicycling planning practice across the U.S. Table 6 shows the LTS for selected roadways in the study area.

Table 5: Levels of Traffic Stress

LTS	Stress Description	Suitability Age	Traffic Speed	Intersections	Locations
1	Little, requiring less attention than children have	Age 10 or higher	Low	Easy to cross	Residential separated cycle paths
2	Little, requires more attention	Teens and Adults with bicycle skills	Low Differentials	Not difficult for teens	Collector street w/bike lanes or downtown
3	Moderate	Observant Cyclists	Moderate	Safe for adults	Low-speed arterials w/bike lanes or non-multilane road
4	High	Experienced	High	Complex, wide, high volume/speed	High-speed or multilane road or no bike lanes

Cycling comfort decreases as number of lanes and posted speed increases. Cycling comfort increases when dedicated roadway spaces is provided and interaction with motor vehicles are reduced (e.g., buffered bike lanes or cycle tracks). Discomfort at intersections increases with number of lanes and speeds and/or decreasing with traffic calming and intersection controls.

Bicycle facilities in Rogue River are inconsistent to generally absent. There are no official bicycle facilities with pavement markings. Anything that looks like a bicycle lane is a paved shoulder. The "bicycle lanes" along Pine Street and Oak Street are too narrow to be used as vehicle parking. In wider locations, vehicle parking does occur.

There is also a lack of marking to show that vehicles and bicycles are sharing the same lanes, such as on East Main Street west of Ward Creek Road. The result is that there are no expectations of drivers that bicycles will be on the shoulder or in the travel lanes.

The Pine Street paved shoulder/"bicycle lanes" run along both sides of Pine Street beyond the elementary and middle schools and into the suburban area until it turns into East Evans Creek Road. The paved shoulder on East Evans Creek Road and past the high school is only about four feet in most places, and while potentially inviting, it is functionally too narrow for safe bicycle riding. Pine Street is a busy roadway, but the speeds are low. This section should be considered a LTS 2, but a LTS 4 on East Evans Creek Road once the wider shoulders go away and the vehicle/posted speeds increase.

West Main Street has paved shoulders that could be used as bicycle facilities. In some locations east of East Evans Creek Road, there is no sidewalk and a section of the pavement is striped to substitute for a combination walking path/possible bike lane. The section of North River Road from south of Classick Drive to East Main Street has wide paved shoulders that could function as a bicycle lane. Also, East Main Street west from Wards Creek Road has a wider shoulder on the north side to the Ward Creek bridge, near Cedar Street. There is no bicycle lane on East Main Street, from Ward Creek to Pine Street to connect the West Main and Pine Street sections. There should be bicycle lanes on both sides of the street so that bicycles can travel in the same direction as the vehicular traffic. Near the center of town there is more on street parking and vehicles moving in and out of business accesses.

Table 6: Existing Rogue River Level of Traffic Stress

Location	Input	Rank
Pine Street	Low speeds, two lanes, wider paved shoulders	LTS 2
East Evans Creek Rd	Moderate speeds, two lanes, narrow shoulders	LTS 4
West Main St	Low speed, two lanes, mixed traffic conditions	LTS 2
East Main St	Low speed, two lanes, mixed traffic conditions	LTS 2
Broadway St north of 1st Street	Low speed, two lanes, mixed traffic conditions	LTS 2
Broadway St south of 1st Street	Low speed, two lanes, narrow bike lane with adjacent parking	LTS 3
River Rd north of Classick Dr	Low speed, two lanes, wide shoulder "bike lane"	LTS 2
River Rd south of Classick Dr	Moderate speed, two lanes, wide shoulder "bike lane"	LTS 3

Given the low speeds at or less than 25 mph and generally two- lane cross sections, the sections of West and East Main Street are LTS 2. River Road north of Classick Drive is also LTS 2 with the slower speeds, but becomes LTS 3 with the increase to 35 mph south of Classick Drive.

Qualitative MMLOS

The Qualitative Multimodal Assessment methodology (QMA) follows the concepts of the full MMLOS in the 2010 Highway Capacity Manual (HCM). A subjective rating of "Excellent/Good/Fair/Poor" is applied to a roadway segment or intersection base on its characteristics. This generalized process allows for a representation of the roadway network to be produced without the intense data collection required by the full HCM MMLOS. Bicycle, Pedestrian and Transit facilities are largely influenced by adjacent modes. Each of the rankings takes into account many aspects of the mode. Each looks at a different combination of available facilities, width of the facility, vehicular travel speeds, number of vehicular lanes, and more. Appendix D contains tables with the information they take into account. The bicycle mode is covered under the LTS section, so it will not be repeated in this section. Table 7 contains the summarized multimodal assessment for pedestrians and transit for the area.

Table 7: Existing Rogue River Qualitative Pedestrian & Transit Assessment

Location	Pedestrian	Transit
Pine St	Fair	Poor
East Evans Creek Rd	Very Poor	Poor
West Main St	Poor	Poor
East Main St west of Ward Creek	Poor	Poor
East Main St east of Ward Creek	Fair	Poor
Broadway St north of 1st St	Fair	Poor
Broadway St south of 1st St (west side only)	Fair	Poor
North River Rd	Fair	Poor

Pedestrian Facilities

Availability of sidewalk facilities in the study area are inconsistent. West Main Street has sidewalk to the west of Pine Street for a few blocks but that converts to a striped walking path on the north side road shoulder which continues all of the way to East Evans Creek Road. The East Main Street section has sidewalk facilities on the south side from the east end, Rogue Lane, to Ward Creek, near Cedar Street. There are sidewalk facilities on both sides of East Main Street, from Ward Creek to Pine Street to connect the two sections.

River Road has a sidewalk on the east side from Wards Creek Road to a bit past Classick Drive. There are sidewalks on each side of Pine Street until just north of Short Street.
From there sidewalk only exists on the west side of Pine Street for a short distance. From Creek View Lane north, there are no sidewalk facilities on Pine Street.
Most sidewalk locations have fair pavement conditions, but many have substandard widths or ADA (Americans with Disabilities Act) ramps. For this reason, they received a fair rating.

Transit Facilities

There is no internal city public transportation inside of Rogue River. This would lead to a "Very Poor" rating due to there are not being any transit facilities available for travel inside the city. There is a Rogue Valley Commuter line that travels between Grants Pass and Medford. There is

one stop in Rogue River at the Community Center at 132 Broadway Street. The cost is two dollars cash or a $50-dollar monthly pass. There are fewer than 10 stops per day. Considerable walking (but not excessive) will be required from most residential areas to reach the stop location. This is only useful for leaving the city of Rogue River and traveling to Grants Pass or Medford. Due to this service, the transit will be rated "Poor."

Crash and Safety Analysis

Crashes within the Rogue River urban growth boundary (UGB) were analyzed for the last five full years of available data (2010-2014). Crash information was obtained from ODOT's Crash Analysis and Reporting Unit which is the official state source. Appendix E shows the full crash listings.

I5 (Hwy #001) Crash Summary (MP 48.32 – 49.87)

The crashes in this section of I5 within the Rogue River UGB are typical for an interstate highway. The typical crash seems to be a property damage only crash that involved an improper lane change or another driver error. The crashes typically occurred in clear, dry, daylight conditions in the afternoon. None of the crashes occurred in work zones. None of the crashes involved a pedestrian, bicyclist, or a motorcycle. The highest age groups in crashes were 20 - 29 year olds and 60 – 69 year olds. Tuesday was the highest day for crashes.

No fatal crashes occurred in this section of I5, but there were three severe injury A crashes. One severe injury A occurred at the median barrier at 8pm on a Saturday. Two older drivers sideswiped each other in passenger cars. It was rainy and the pavement was wet. The driver was driving too fast for conditions and made an improper lane change.

At the northbound off-ramp another injury A occurred on a Tuesday at 6pm. The driver lost control as a tire failure occurred and ran off the road. The vehicles hit the median barrier and the guard rail. With snow on the road, the speed was too fast for conditions in the last injury A crash. The driver lost control and the vehicle ran off the road into the median barrier.

Table 8 shows the breakdown of the crashes by type. The number of crashes may not match those reported to have occurred on the I5 mainline as this also includes crashes on the interchange ramps.

Table 8: I5 (Hwy #1) MP 48.32 – 49.87 Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Fixed Object	5	9	4	4	2	**24**
Other	0	0	2	0	0	**2**
Non-Collision	1	0	0	1	0	**2**
Rear-end	1	2	2	2	2	**9**
Sideswipe-Overtaking	2	1	1	2	1	**7**
Total	**9**	**12**	**9**	**9**	**5**	**44**
Fatal - Injury A[1] Crashes	2	0	0	1	0	**3**
Intersection / Related	0	0	0	0	0	**0**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

Gleaned points of the 44 total crashes:

- 58% were property damage only crashes
- 53% were fixed or other object crashes
- 22% were due to improper lane change
- 18% were due to traveling too fast for conditions
- 58% occurred in daylight conditions
- 64% occurred in dry conditions
- 53% occurred in clear conditions
- 49% occurred on a horizontal curve
- 33% occurred on a straight alignment
- 9% occurred at the off-ramps
- 13% occurred in the 3pm hour, 46% from noon to 6pm

Crashes generally decreased year by year with the high of 12 crashes in 2011.

- 9 crashes in 2010
- 12 crashes in 2011
- 9 crashes in 2012
- 9 crashes in 2013
- 5 crashes in 2014

OR99 (Hwy #060) Crash Summary (MP 8.52 – 9.52)

The crashes on this section of OR99 within the Rogue River UGB are typical for a minor arterial highway with street connections. The typical crash seems to be a property damage only crash that involved following too closely or careless driving. The crashes typically occurred at an intersection in clear, dry, daylight conditions. None of the crashes occurred in work zones. No fatal or severe injury A crashes occurred in this section of I5. None of the crashes involved a pedestrian, bicyclist, or a motorcycle. The highest age groups in crashes were 20 - 29 year olds and 60 – 69 year olds. Tuesday and Saturday were the highest days for crashes.

Table 9 shows the breakdown of the crashes by type. The number of crashes may not match those reported to have occurred on that street due to the crashes being reported on an intersecting higher classification roadway.

Table 9: OR99 (Hwy #60) MP 8.52 – 9.52 Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Fixed Object	0	0	1	0	0	**1**
Rear-end	0	1	0	3	3	**7**
Turning	0	0	0	1	0	**1**
Total	**0**	**1**	**1**	**4**	**3**	**9**
Fatal - Injury A[1] Crashes	0	0	0	0	0	**0**
Intersection / Related	0	0	0	0	0	**0**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

Gleaned points of the 9 crashes in the last full five years of available data (2010-2014):

- 44% were property damage only crashes
- 78% were rear-end crashes
- 33% were due to following too closely
- 78% occurred in daylight conditions
- 67% occurred in dry conditions
- 67% occurred in clear conditions
- 67% occurred at an intersection
- 22% occurred in the 9am hour, 1pm hour, and 3pm hour

Nine crashes is too small a number to state a trend over the five years.

- 0 crashes in 2010
- 1 crash in 2011
- 1 crash in 2012
- 4 crashes in 2013
- 3 crashes in 2014

Safety Priority Index System (SPIS)

The Safety Priority Index System (SPIS) is a method developed in 1986 by the Oregon Department of Transportation (ODOT) for identifying potential safety problems on stated highways. The SPIS identifies locations based on three years of crash data and considers crash frequency, crash rate, and crash severity. A roadway segment becomes a SPIS site if the location has three or more crashes or a least one fatal crash over the three-year period. There are no 2013 or 2014 SPIS or top 10% SPIS sites within the stated mile points on I5 or OR99 within the Rogue River UGB.

Rogue River Street Network Crash Summary

Tables 10-15 show the breakdown of the crashes by type for the City street network. There were no crashes on these roadways from 2010 to 2014 or they are recorded on a higher classification intersecting roadway: East Evans Creek Road, West Evans Creek Road, Broadway Street, Cedar Street, Wards Creek Road, 1st Street, 2nd Street, 3rd Street, and Pine Street.

The number of crashes in the tables may not match those reported to have occurred on that street due to the crashes being reported on an intersecting higher classification roadway.

Table 10: Classick Dr Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Sideswipe-Meeting	0	0	0	1	0	**1**
Total	**0**	**0**	**0**	**1**	**0**	**1**
Fatal - Injury A[1] Crashes	0	0	0	0	0	**0**
Intersection / Related	0	0	0	0	0	**0**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

There were not enough crashes on this street to draw any trends or conclusions from.

Table 11: Depot St Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Angle	0	0	1	2	0	**3**
Rear-end	1	2	0	2	2	**7**
Turning	0	2	0	1	0	**3**
Total	**1**	**4**	**1**	**5**	**2**	**13**
Fatal - Injury A[1] Crashes	0	0	0	0	0	**0**
Intersection / Related	0	4	1	4	2	**11**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

Most of the crashes were at the I5 ramp terminal signals or at the adjacent Pine Street intersection with various causes. For example, one of the crashes at the ramp terminal involved a tire failure, another that involved failure to yield right of way and a third involved reckless driving and disregard for a signal. The close proximity of these two intersections with the railroad crossing in between results in driver decision points to overlap which can be a contributing factor. A majority of the crashes occurred in 2011 and 2013.

Table 12: Foothills Blvd Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Fixed Object	1	0	2	1	2	**6**
Total	**1**	**0**	**2**	**1**	**2**	**6**
Fatal - Injury A[1] Crashes	0	0	1	0	0	**1**
Intersection / Related	1	0	0	0	1	**2**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

All crashes on Foothill Boulevard were fixed object crashes. Two of which were traveling too fast for conditions (weather and light). Generally, the fixed object was a tree stump, ditch, sign, or bridge railing.

The fatality that occurred near the intersection of West Evans Creek Road and Foothill Boulevard involved one car, one person, drugs, and alcohol. The crash occurred at 3 AM on a Wednesday in May. The conditions that early morning was clear weather, dry pavement, and dark (unlit). The driver made an improper wide turn, lost control of the vehicle, and ran off the road.

Table 13: Main St Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Angle	1	0	0	0	1	**2**
Fixed Object	0	0	0	1	0	**1**
Rear-end	1	2	1	0	0	**4**
Sideswipe-Overtaking	0	1	0	0	0	**1**
Turning	2	0	2	0	0	**4**
Pedestrian	0	1	1	0	0	**2**
Total	**4**	**4**	**4**	**1**	**1**	**14**
Fatal - Injury A[1] Crashes	0	0	1	0	0	**1**
Intersection / Related	5	3	2	1	1	**12**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

The number of crashes occurring has gone down in recent years. There is a wide variety of crash types on Main Street but are typical for an urban area as most are intersection related. Five of the intersection related crashes occurred on Pine Street.

The pedestrian crash near Gilmore Street took place at 5 PM on a Wednesday in January (2011). It was foggy, but the pavement was dry, and the location was illuminated. The pedestrian was injured with an injury severity of Injury B. The pedestrian was crossing improperly between intersections. The pedestrian's clothing was not easily visible.

The fatality was at the intersections of a private roadway, Pioneer Court. An 86 year old man was struck down by a truck traveling west on Main Street. The crash occurred on a Thursday in January at 9 AM. It was a rainy day with wet pavement. The pedestrian was not in visible clothing and crossing improperly between intersections.

Table 14: Oak St Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Turning	0	0	1	0	0	**1**
Total	**0**	**0**	**1**	**0**	**0**	**1**
Fatal - Injury A[1] Crashes	0	0	0	0	0	**0**
Intersection / Related	0	0	1	0	0	**1**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

There were not enough crashes on this street to draw any trends or conclusions from.

Table 15: River Rd Crash Type and Year Table

Crash Type	2010	2011	2012	2013	2014	Total
Fixed Object	1	1	0	1	0	**3**
Sideswipe-Meeting	0	0	0	0	2	**2**
Total	**1**	**1**	**0**	**1**	**2**	**5**
Fatal - Injury A[1] Crashes	0	0	0	0	1	**1**
Intersection / Related	0	0	0	0	0	**0**

[1]Injury A is an incapacitating non-fatal injury (i.e. broken bones, severe/internal bleeding, unconsciousness, etc.) that prevents a person from continuing normal activities that they were capable of before the injury.

Of the four crashes on North River Road south of Classick Drive, all involved an injury. Most crashes occurred on a clear, dry day. One of the crashes included an Injury A severity injury of a two year old. Alcohol was involved in that crash. All of the crashes involved a vehicle traveling southbound and older drivers. Two of the four crashes were sideswipe meeting crashes.

The Highway Safety Manual Part B screening Critical Crash Rate methodology was used to screen the three-legged unsignalized intersections in the study area. There is not enough four legged unsignalized or signalized intersections to use this methodology on, so those types only are compared with the published 90th percentile crash rate. All of the intersection crash rates are less than their corresponding critical rates and the published 90th percentile crash rate as shown in Tables 16 and 17. Even though there are evident crash patterns at the intersections of Pine Street with Depot Street and Main Street, there are not enough crashes and related safety issues here to discuss further.

Table 16: Three Leg Intersection Crash Comparison Table

Three Leg Intersection	Crash Total (5 yrs)	Crash Rate	Critical Crash Rate	Over Critical Crash Rate
East Main St and Wards Creek Rd	0	0.00	0.31	Under
Foothill Blvd and West Evans Creek Rd	2	0.19	0.21	Under
East Main St and Broadway St	0	0.00	0.19	Under
East Main St and Cedar St	1	0.06	0.21	Under
North River Rd and Classick Dr	0	0.00	0.35	Under

Table 17: Intersection Crash Comparison Table

Other Intersection	Crash Total (5 yrs)	Crash Rate	90th Percentile Crash Rate	Over 90th Percentile Crash Rate
Classick Dr/Pine St and Depot St	5	0.22	0.408	Under
Depot St and Main St	1	0.07	0.408	Under
Main St and Pine St	5	0.27	0.408	Under
Hwy 99 and Depot St	2	0.12	0.408	Under
I5 NB and Depot St	3	0.12	0.509	Under
I5 SB and Depot St	5	0.24	0.509	Under

Summary

No locations are beyond the maximum allowable v/c ratios in 2016. While there are evident crash patterns at a few locations, crash rate thresholds have not been met, so these locations at the intersections of Pine Street with Depot Street and Main Street and on North River Road are more in a "monitoring" state under existing conditions.

Other noted issues are:

- Queuing on Depot Street between the southbound I5 ramp and Pine Street
- Potential queuing onto the I5 off-ramps and mainline
- Truck turning/off-tracking conflicts at the southbound I5 ramp terminal between south-to-east and west-to-south movements
- Lack of marked bicycle lanes throughout
- Inconsistent sidewalks especially outside of the downtown area
- Infrequent connecting transit service and stops within the City

Section 5 – Future Condition

Overview

This section analyzes Rogue River's 2040 future-no-build conditions. This will provide an overview of future transportation system operations and deficiencies. This analysis includes an evaluation of the study intersections. Analysis results will identify future transportation system needs for motorized and non-motorized travel modes.

In the 2040 future conditions analysis, there were intersections exceeding volume-to-capacity (V/C) targets or standards, especially the I5 interchange and downtown area. There will be substantial queuing impacts and safety related issues on the I5 off-ramps and Depot Street starting at OR99 going through the interchange area and up to the Pine & Main Street intersection. Heavier traffic conditions will make walking and bicycling less comfortable and transit potentially less reliable.

Background

The City of Rogue River is in Jackson County along I5 and OR99 and is part of the Middle Rogue Metropolitan Planning Organization (MRMPO). In July 2011, Rogue River's population was 2,140. This is projected to grow 40% to 3,975 by 2040 by Portland State University's Center for Population Research. The city has expanded south beyond manmade and natural barriers of railroad tracks, an interstate, and a river. The I5/Depot Street interchange is crammed in between the Central Oregon and Pacific railroad tracks and the Rogue River which becomes a series of restrictive barriers in close proximity to each other. To add to this there are streets that are crammed in very close on either side. OR99 is on the other side of the river. Pine/Classick Dr is even closer and a difficult barrier to cross. This leads to safety risks, traffic operations issues, and problems in future planning.

The City has developed from south of the Rogue River and stretched north beyond the city limits to build the high school on East Evans Creek Road (Pine Street in Rogue River). The main street of the community is the east/west oriented Foothill Boulevard/E Main Street/W Main Street. This is connected to I5 and OR99 by way of Depot Street.

Evaluation Criteria and Analysis

Intersection operations analysis results were compared to ODOT and the county standards and targets to assess performance and potential improvement. The City appears not to have traffic operational standards, so a v/c ratio of 0.95 was used, equivalent to both a state district-level highway v/c target in the Oregon Highway Plan (OHP) and Jackson County's inside-MPO standard. Jackson County and ODOT use volume to capacity (V/C) ratios, which compare traffic volume entering an intersection to theoretical capacity of an intersection. A v/c ratio of 1.0 indicates an intersection operating at capacity, while a v/c ratio over 1.0 indicates an intersection's capacity is exceeded.

The 1999 OHP mobility standards (amended in 2015) were used to evaluate v/c ratios for state highways in an MPO. Under the OHP, the maximum acceptable V/C ratio for I5

and the interchange ramp terminals is 0.85 and 0.95 for OR99. Jackson County uses V/C standard of 0.95 for intersections within an MPO.

The intersection operations analysis was conducted using SIDRA Version 7 software, with Highway Capacity Manual (HCM) 2010 methodologies. Signalized intersection V/C's were calculated using the critical volume to capacity ratio process described in HCM 2010. The I5 mainline segments and merge/diverge areas were analyzed with HCS 2010. Queuing was developed using the SIDRA software.

Volume Development

The 2040 volumes were grown from the 2016 30th highest hour volumes developed. This aggregates the 2016 existing year conditions with the through trip growth and separate estimates of residential, commercial and industrial growth to compute the 2040 future volumes. See Appendix A for calculations and volume components for developing 2040 volumes.

The background through trip growth is based on historical Jackson County counts and ODOT's Future Volume Tables. These were taken approximately where the study area roadways cross the Urban Growth Boundary (UGB).

The residential, industrial, and commercial growths were based on differences between the 2040 and 2016 values. New single family homes, manufactured homes, and apartments were placed following City zoning and direction. Residential volumes were calculated using Institute of Traffic Engineers (ITE) Trip Generation equations and then distributed to destinations.

In determining commercial and industrial growth, commuters traveling in and out of the city were split out from internal city commuters. ODOT's Statewide Integrated Model (SWIM) determined percentages of commuters traveling to Jackson County (Medford area), Josephine County (Grants Pass area) and local destinations, which determined:

- 32% of workers commuting via a vehicle go or from Jackson County
- 42% of workers commuting via a vehicle go or from Josephine County
- 26% commute locally

The commuter trips were further modified with American Community Survey (ACS) 2010-2015 commuting–to-work data for Rogue River:

- 13% walked/other
- 9% worked from home
- 8% carpooled

Commuting commercial and industrial employees going outside Rogue River were reduced by the carpool percentage. Local commercial employees were reduced by the walk/other and working from home percentages, while industrial employees were only reduced by the walk/other percentage.

SWIM determined commercial employee trip generation. The ITE Trip Generation "General Light Industrial" equation converted industrial employees to trips. A

combination of typical land use types (i.e. gas station, motel, specialty retail, etc.) determined the inbound/outbound percentages.

SWIM also determined distribution of trips using the 2034 future scenario. The surrounding area was split into districts indicated below. "Outside" zones are trips to anywhere else, such as to Douglas County or California. The resulting distributions were generally consistent with the ACS, commuter patterns, and local perceptions. The general trip distribution was:

- From/to rest of Jackson County (via I5 and OR99) : 28%
- From/to Josephine County (via I5 and OR99): 47%
- From/to zones south of OR99 (via OR99 in both directions) : 20%
- From/to Outside zones (via I5, both directions) : 5%

The resulting individual residential, commercial, industrial, and total 2040 volumes are shown in Appendix A.

2040 Existing Conditions Analysis Results

Preliminary Signal Warrants

Preliminary Signal Warrants (PSW) were evaluated to determine if study area intersections were eligible for potential traffic control changes including signalization. ODOT's Preliminary Signal Warrants (PSW) are based on Manual of Uniform Traffic Control Devices (MUTCD) Warrant 1 (Case A and B). Case A and B deal primarily with high volumes on the minor street and high volumes on the major street, respectively. Meeting preliminary signal warrants does not guarantee that a signal (or other change) will be installed. An intersection traffic control study would be needed by the appropriate jurisdiction weighing costs and benefits of such a change. For example, traffic signals can degrade a previously non-stopped major roadway while enhancing minor street operation. A traffic signal may introduce safety hazards that outweigh the benefits. In ODOT's jurisdiction, traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal is installed. No intersections met PSW's for 2040; however Main & Pine Street and Pine & Depot Street are close.

Volume to Capacity ratio & Level of Service

For 2040, future volumes were evaluated to describe operating conditions. Table 1 shows v/c ratios for project area intersections; some are beyond the maximum allowable V/C ratio (0.85 or 0.95 for OHP) or 0.95 for county jurisdiction. For additional information on operation, delay-based LOS is shown.

Table 1: 2040 V/C Ratios & LOS

Intersection	LOS[1]	Highest Movement[2]	V/C Ratio[3]	Queue[4] (ft)	Agency	Standard
Depot St at Pine St	F (east)	EB	0.72	**max**	City	0.95
Depot St and I5 NB	B	SB	**0.85**	**max**	ODOT	0.85
Depot St and I5 SB	F	NB	**0.87**	**max**	ODOT	0.85
Depot St and OR99	E	EB	0.63	275	ODOT	0.85
Depot St and Main St	C (south)	NB	0.36	50	City	0.95
Main St and Wards Creek Rd	B (north)	SB	0.13	< 50	City	0.95
Main St and Cedar St	C (north)	SB	0.29	< 50	City	0.95
Main St and Broadway St	C (north)	SB	0.35	< 50	City	0.95
Foothill Blvd and W Evans Creek Rd	B (north)	SB	0.28	< 50	City	0.95
Main St and Pine St	E	WB	**1.08**	**325**	City	0.95
N River Rd and Classick Dr	B (east)	EB	0.13	< 50	City	0.95

[1]Corresponding leg that applies to the LOS is shown.
[2]The Highest Movement describes queues
[3] Black cells are V/Cs at or exceeding standard
[4] Black cells are queues that block other intersections

Table 2 shows the v/c for mainline I5 and the merge and diverge areas of the ramps. Under normal operation I5 should perform quite well, as seen in Table 2; no locations were over the 0.85 maximum OHP v/c target. Analysis worksheets are in Appendix B.

Table 2: 2040 Mainline & Merge/Diverge v/c for I5 at Rogue River Interchange

Section	V/C
NB north of interchange	0.28
SB north of interchange	0.28
NB Diverge from I5	0.62
SB Diverge from I5	0.61
NB between ramps	0.23
SB between ramps	0.23
NB Merge onto I5	0.67
SB Merge onto I5	0.65
NB south of interchange	0.28
SB south of interchange	0.28

Average Daily Traffic to Capacity Ratio

With high volume to capacity ratios on Depot and Pine Streets and potential extensive queuing, peak spreading was investigated. This is when more traffic is on the roadway network than can be handled in a single peak hour and traffic spreads into adjacent hours. Adjacent peak hours will still be busy. Any spreading to occur in Rogue River would spread later beyond the 3:30-4:30 PM system peak hour as the school release time limits this from moving earlier in the day. The ADT/C ratio measures the potential of peak spreading and impact of congestion. The ADT/C is the ratio of daily traffic to capacity (capacity is defined by intersection approach). The highest approach ADT/C is reported for each intersection, except for Depot and Pine Street as the Classick Drive ADT/C was excessively high due to a very low approach capacity.

Table 3: 2040 ADT/C Ratio:

Intersection	**Highest ADT/C**
Depot St at Pine St	7.01
Depot St and I5 NB	10.36
Depot St and I5 SB	9.10
Depot St and OR99	6.31
Depot St and Main St	10.76
Main St and Wards Creek Rd	1.17
Main St and Cedar St	2.94
Main St and Broadway St	5.80
Foothill Blvd and W Evans Creek Rd	3.43
Main St and Pine St	12.94
N River Rd and Classick Dr	1.30

The ADT/C methodology was developed for FHWA (i) and has been used by ODOT for the statewide congestion management system. It is a higher level of congestion rating compared to queueing. ADT/C thresholds are as shown in Table 4.

ADT/C ratios of 6.75 – 10.75 are more of the standard peak "15-min" typical urban congestion that stays within a single hour. Peak spreading is more likely to occur once the ADT/C exceeds 10.75 when speeds decrease for good portions of the peak hour. Peak spreading is occurring with ADT/C's of 15.25 or greater.

Table 4: ADT/C Congestion Level Thresholds

Level	Condition	Description	Lower ADT/C	Upper ADT/C
1	Uncongested	No decrease in speeds during the peak hour.	0.00	6.75
2	Uncongested to Moderately		6.75	8.25
3	Moderately Congested	Speeds decrease slightly during portions of the peak hour.	8.25	9.25
4	Moderately to Congested		9.25	9.75
5	Congested	Speeds decrease significantly during portions of the peak hour.	9.75	10.75
6	Congested to Very		10.75	12.25
7	Very Congested	Speeds decrease substantially for substantial portions of the peak hour.	12.25	13.75
8	Very to Extremely		13.75	15.25
9	Extremely Congested	Speeds decrease substantially for more than the peak hour.	15.25	24.00

Peak spreading was investigated and while peak hours will be heavy through the entire hour, trips will likely not delay to another hour. Main & Pine Street's high potential for extended congestion, reflected in queuing and ADT/C, merits investigation for improvements.

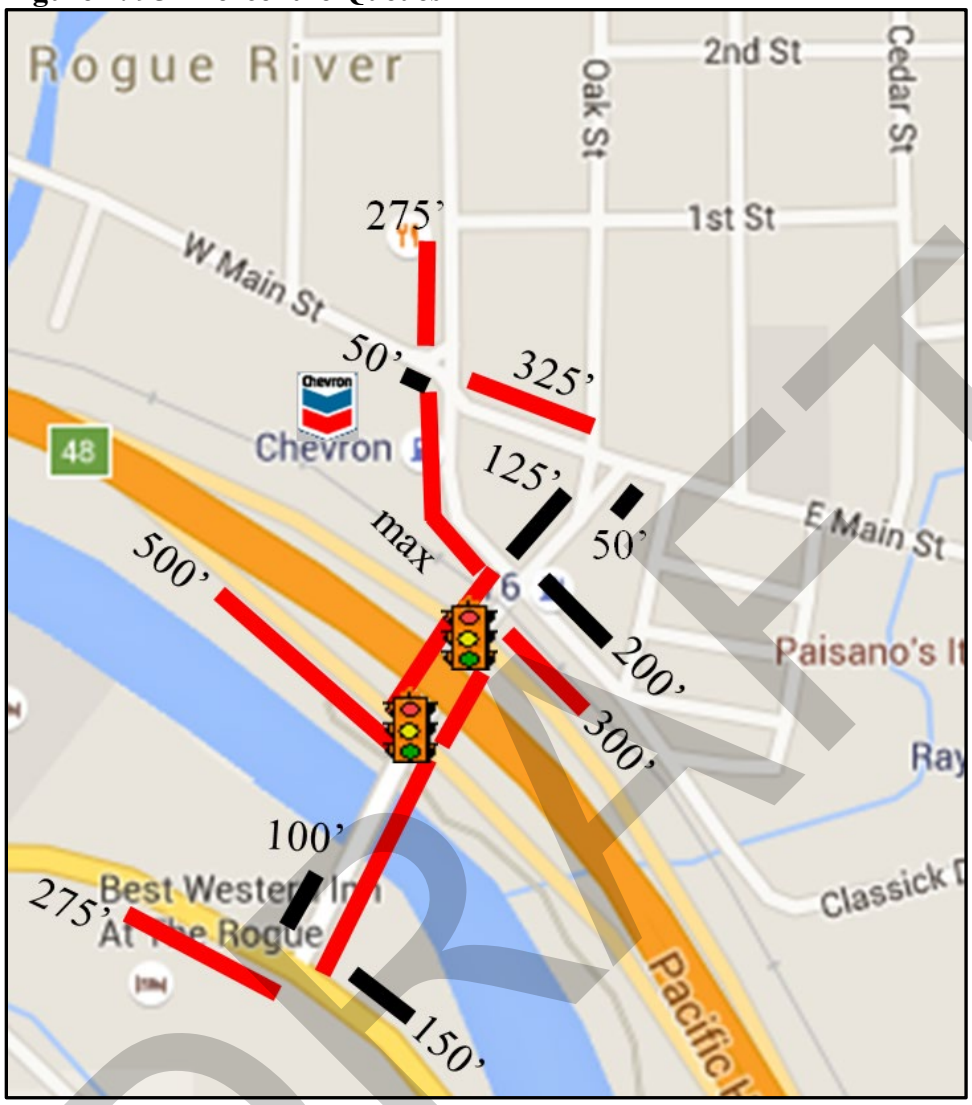
95th Percentile Queues

In addition to V/C ratios, ADT/C ratios, and LOS, the 95th percentile queues were analyzed to better understand system operation. Excessively long queues are often seen in areas where V/C ratios exceed standards. Figure 1 shows 2040 95th percentile queuing of the study area. The largest queuing concerns are:

Depot Street and Pine Street: eastbound queue extends to intersection of Main Street and Pine Street. Therefore, the southbound queue waiting for a gap in traffic may extend more than shown, affecting Depot Street.

Depot St and I5 NB: southbound and northbound queues extend to the Pine Street intersection as well as the southbound ramp. The 300-foot queue is a concern as it potentially extends into the ramp deceleration portion.

Figure 1: 95th Percentile Queues



Depot St and I5 SB: southbound and northbound queues extend 700 and 800 feet respectively. This means the queue goes from intersection ramp to intersection ramp (both directions). This also means there is a queue that spills back to OR99. The 500 foot queue up the ramp is a significant concern as it may extend into the ramp deceleration portion.

Depot St and Main St: with only a minor delay at one intersection, there will be continuous standing traffic from OR99 to Main Street (entire length of Depot Street). The queue from Pine Street and Main Street will affect operation of this intersection.

The constrained interchange section can cause a number of operational issues. Any kind of incident or delay (parking operation or large truck turning) on Depot Street or a train crossing can quickly create congestion up the ramps and onto I5 mainline. Extending queues into the ramp deceleration portion or mainline traffic is a safety issue. Drivers may have to prematurely brake or brake harder than expected. This would increase the

potential of rear-end crashes. The southbound off-ramp is more likely to have this problem more often than the northbound direction.

Southbound ramp terminal geometry is tight enough that trucks turning left can interfere with vehicles waiting in the left turn lane to head south on I5. The ramp is between I5 and the Rogue River Greenway and the Rogue River.

Non-Motorized Operations

The pedestrians and bicyclists counted from 3:00 to 5:00 p.m. were updated with the 40% population growth rate from 2016 to 2040, Tables 5 and 6. There is a base level of use on the pedestrian and bicycle system throughout the City even in the highest vehicular volume areas.

Table 5: Pedestrian Crossings

Intersection	Pedestrian Crossings 3-5PM peak period			
	North	East	South	West
Depot St at Pine St	0	4	0	3
Depot St and I5 NB	1	10	0	10
Depot St and I5 SB	3	6	4	8
Depot St and OR99	0	1	3	3
Depot Stand Main St	11	7	8	48
Main St and Wards Creek Rd	4	0	N/A	3
Main St and Cedar St	36	17	N/A	3
Main St and Broadway St	14	4	N/A	14
Foothill Blvd and W Evans Creek Rd	5	15	N/A	0
Main St and Pine St	14	13	39	20
N River Rd and Classick Dr	6	N/A	0	0

Bicycle, pedestrian, and transit are largely influenced by adjacent modes. Without any planned projects, there is no difference between the 2016 and 2040 conditions. As traffic congestion grows comfort of bicyclists and pedestrians will decrease. Congestion at the interchange and surrounding roadways may cause issues with transit schedule.

Table 6: Bicycle Movements

Intersection	Bicycles Entering Volumes 3-5PM peak period			
	North	East	South	West
Depot St at Pine St	0	0	4	1
Depot St and I5 NB	1	0	4	N/A
Depot St and I5 SB	1	N/A	4	0
Depot St and OR99	11	4	0	0
Depot St and Main St	0	0	1	1
Main St and Wards Creek Rd	1	0	N/A	1
Main St and Cedar St	No Data	No Data	N/A	No Data
Main St and Broadway St	0	1	N/A	3
Foothill Blvd and W Evans Creek Rd	3	0	N/A	1

Main St and Pine St	0	0	0	1
N River Rd and Classick Dr	0	N/A	0	0

Summary

There are intersections beyond the maximum allowable v/c ratios in 2040 specifically at the interchange and along Pine Street. None of these intersections meet PSWs. Queuing and congestion along Pine and Depot Streets are extensive. This may cause issues on I5 off-ramps as drivers may need to brake prematurely, increasing the potential of crashes. Increasing vehicular flows will mean decreased bicycle and pedestrian comfort as well as less reliable transit service.

Section 6 - Deficiencies

Overview

This section summarizes Rogue River's transportation system deficiencies gathered from previous sections and other sources. This analysis includes an evaluation of the study intersections for transportation system issues for motorized and non-motorized travel modes.

The constrained and congested intersection layout, especially in the central core, will become more of a problem in the future. Intersection approaches will likely need realignment along with addressing capacity and maneuverability issues. Transit, bicycle and pedestrian facilities need to be filled in and improved which may require dedicated funding.

There are a number of safety concerns regarding queuing in the area of the interchange. Queuing and congestion along Pine and Depot Streets will be extensive. This may cause issues on I-5 off-ramps as drivers may need to brake prematurely, increasing the potential of crashes.

Deficiencies

Operations, Safety, Capacity and Maneuverability

There several issues in Rogue River regarding traffic safety, operations, capacity, and maneuverability. Keeping a street network that is safe and efficient is essential for growth and safety of the community.

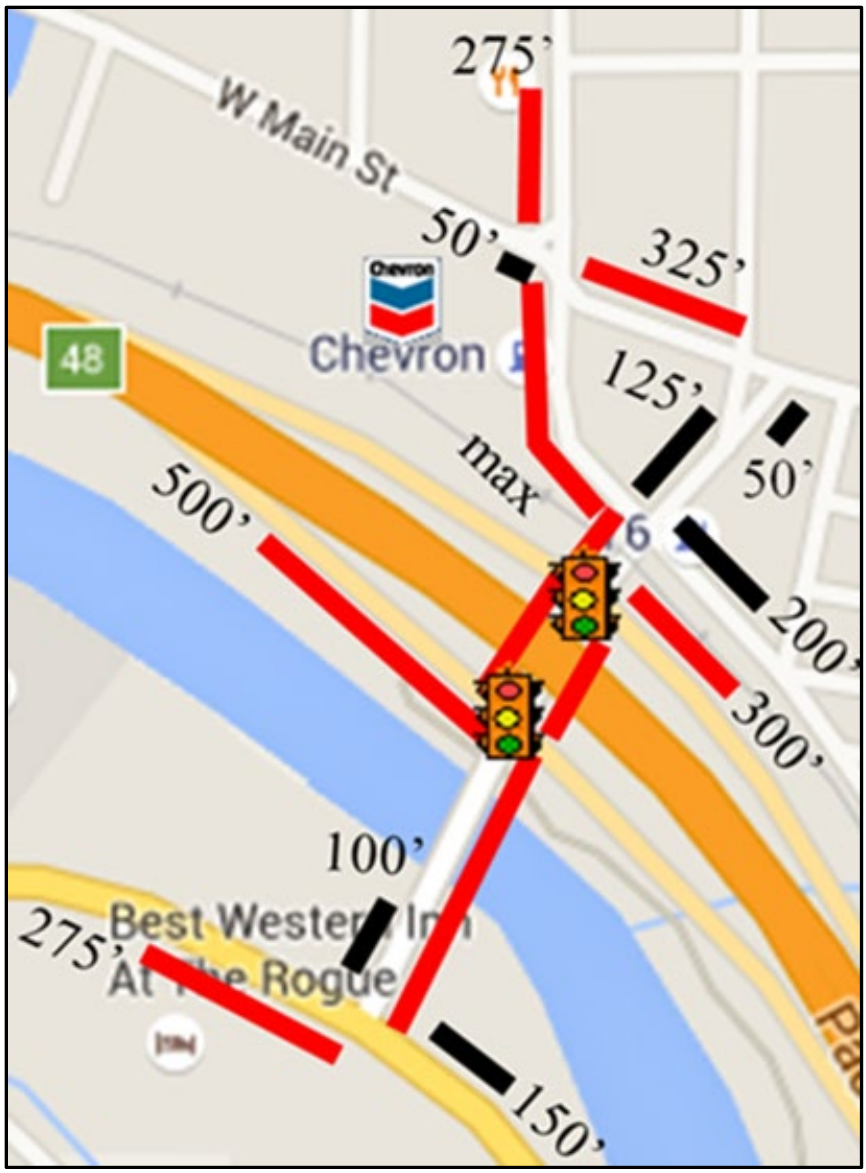
Safety

There are not any intersections with high number of crashes. All the intersection crash rates are less than their corresponding critical rates and the published 90th percentile crash rate. With so few crashes, no patterns can be found or consistent causes to be investigated. There are no Safety Priority Index System (SPIS) sites in the study area. There are sight distance issues at downtown intersections. Drivers cannot see around parked cars at the corners. These spaces could be removed if more off street parking was developed. Improving sight distance will also increase visibility of pedestrians and allow for enhancements. There are a number of locations below with safety hazards.


Rogue
River
OS3
OS4
OS1
ROGUE RIVER HWY NO. 060
OS2
Valley of
the Rogu
State Par

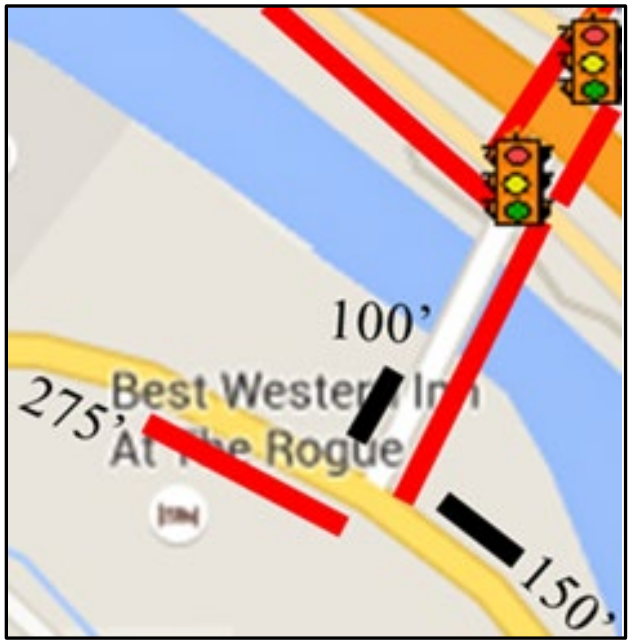
OS1 Ramp Terminal Queuing

The constrained I-5 & Depot Street ramp terminals and the overall interchange section create a number of safety issues. The overall lack of maneuvering room and queue storage leads to congestion even at relatively low volumes, creating serious queuing issues. Any incident or slowdown on Depot Street or a train crossing can quickly create queues back onto the ramps and even onto I-5 mainline. Queuing that extends into the deceleration portion of the ramp or onto I-5 mainline is an inherent safety issue. The southbound off-ramp will start having this problem by 2024. The predicted queue of 500 feet in 2040 will extend well into the deceleration zone. Drivers will need to brake much earlier than expected to avoid potential collisions.



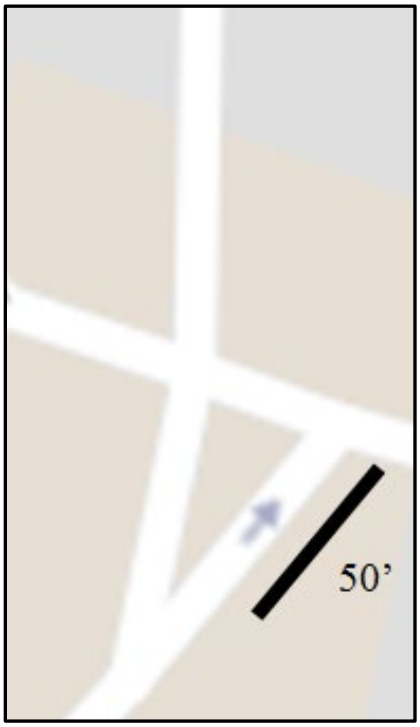
OS2 Depot Street and OR 99

The V/C at this intersection is forecasted to be 0.63 in 2040. This intersection will have a significant southeast bound left turning queue on OR99 that may not be expected by southbound drivers. This may lead to an increased amount of rear-end collisions. Vehicles waiting to turn will not have anywhere to go as there will be queues propagating back from the interchange. The ADT/C ratio is 6.31, uncongested with no slowing speeds.



OS3 Depot Street and Main Street

The v/c at Depot and Main Street is forecasted to be 0.36 in 2040. Intersection operation will likely be affected by queuing extending from the adjacent Main & Pine Street and Pine &Depot Street intersections. The ADT/C ratio is 10.36, congested with slowing speeds on a daily basis. The overall capacity here is low as the intersection is in a non-standard configuration; however Preliminary Signal Warrants (PSW's) were not met. The alignment of this intersection should be investigated. As configured, the northbound movement is indirect and goes through two closely spaced intersections. Both intersection functional areas overlap, leading to increased chance of conflicts, collisions, and pedestrian crash. Drivers too focused on maneuvering through the intersection might not see a pedestrian.

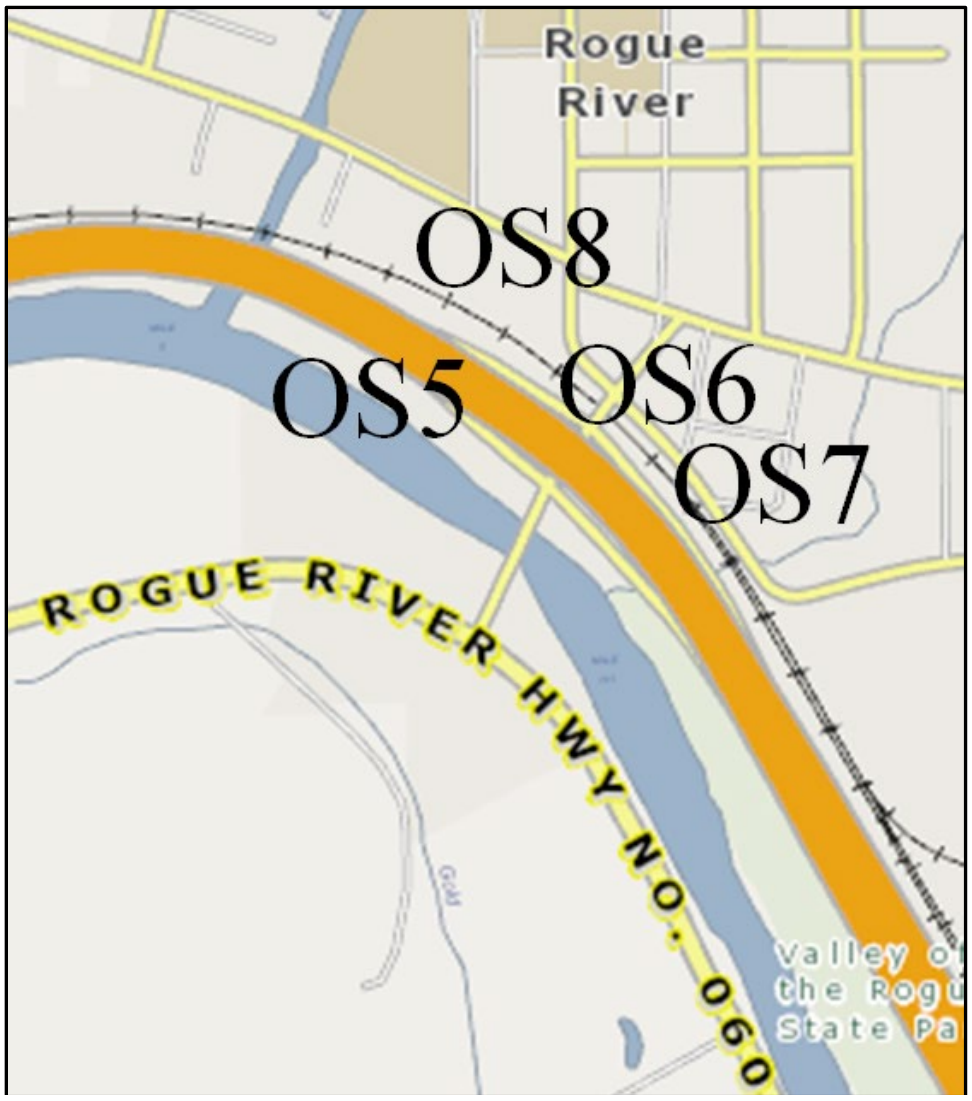


OS4 Depot & Pine Streets/Classick Drive Intersection

The intersection of Depot Street with Pine Street and Classick Drive is too close to railroad tracks and to the I-5 northbound ramp terminal intersection. The functional area, which includes distance traveled during reaction, deceleration, and maneuvering time plus distance for queue storage, overlaps between the two. Functional area overlaps create too many things for a driver to process at once which can lead to an increased rate of crashes.

Capacity and Queues

There are a number of locations below with excessive queuing now or in the future which will likely lead to increased crashes.

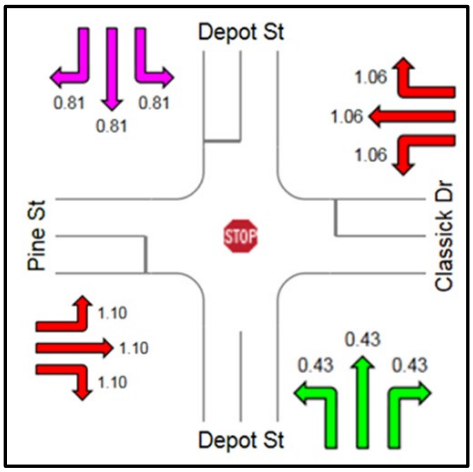


OS5 Depot Street and SB I-5

The v/c at this intersection is forecasted to be 0.87 in 2040 and predicted to exceed the standard of 0.85 in 2038. This signalized intersection will have queues in both directions on Depot Street radiating from the closely spaced nearby intersections. These queues are evident under existing conditions and will get worse. There will be an unreasonable delay due to queuing on all legs, especially on the exit ramp. The ADT/C ratio is 9.10, congested with slowing speeds on a daily basis. As can be seen by the red lines on the queuing diagram, queues will extend through the interchange and up the ramp.

OS6 Depot Street and Pine Street

The v/c at Depot Street and Pine Street is forecasted to be 1.10 in 2040. This intersection is predicted to exceed the standard of 0.95 in 2038. This intersection is forecasted to be at capacity (V/C = 1.00) in 2039. Due to queues and delay, this intersection will not work in its current control and form in the future. Even with the high v/c ratio, this intersection does not meet preliminary signal warrants (PSW), but even if it did, intersection spacing and lack of queue storage space is too limiting for good operation. There will be an unreasonable delay by all three stopped approaches, especially Classick Dr. The ADT/C ratio is 7.01, not hugely congested on a daily basis. The intersection diagram below shows a lack of capacity available for the Pine and Classick movements.

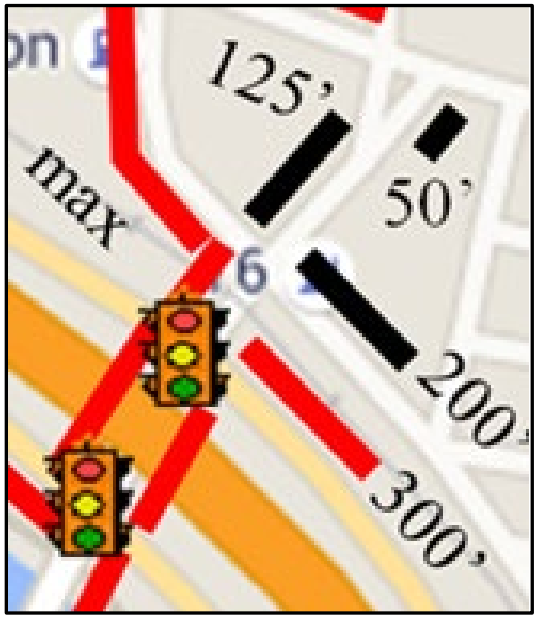


The Depot and Pine Street intersection has a lack of queuing space on the south leg due to a railroad crossing seen in the photograph below. This issue leads to a lack of queuing space on the north leg of the adjacent intersection, the I-5 ramp terminal. Both the Rogue Valley Commuter line transit operation and the City fire department have noted a lack of

space to wait for the northbound I-5 ramp terminal intersection signal and not sit on the railroad tracks, which is a challenge for longer vehicles. The police department also mentions it as a general concern. On the queuing diagram below, there are queues that extend from the interchange upstream into this intersection and the Pine & Main Street intersection. In 2028 the eastbound queue of Depot and Pine Street will be long enough to interfere and interrupt operations at Pine and Main Street. This is a problem that needs to be addressed.

OS7 Depot Street and NB I-5

The V/C at this intersection is forecasted to meet the 0.85 v/c standard in 2040. This signalized intersection will have queues in both directions on Depot Street radiating from the closely spaced nearby intersections. These queues are evident today under existing conditions and will get worse in the future. There will be an unreasonable delay and queues on all legs, especially the exit ramp. The ADT/C ratio is 10.36, congested with slowing speeds on a daily basis. As seen in the photo, there is not queuing space for large southwest bound vehicles on Depot Street heading toward southbound I-5 or OR99. As can be seen by the red lines on the queuing diagram, there are queues that extend through the interchange and up the ramp.



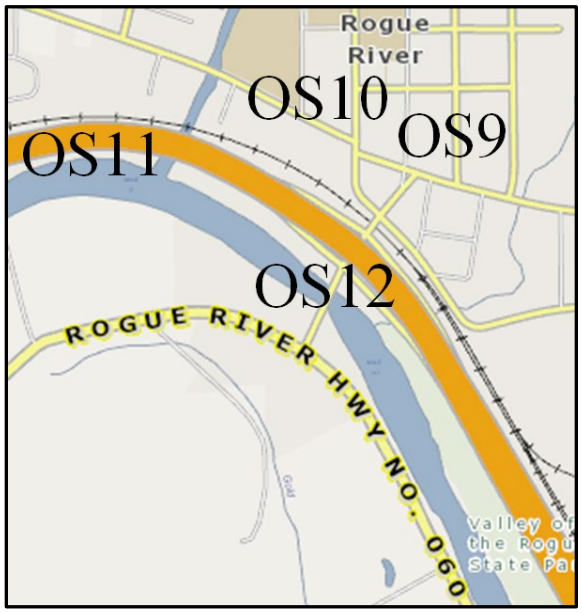
OS8 Main Street and Pine Street

The v/c at this intersection is forecasted to be 1.08 in 2040. This intersection is predicted to exceed the standard of 0.95 in 2035. This intersection is forecasted to be at capacity (V/C = 1.00) in 2037. This intersection will have a southbound queue that will be waiting and unable to enter queue extending from the interchange area. The westbound queue will likely disrupt operation at Depot and Main Street. The ADT/C ratio is 12.94, very congested with substantial slowing of speeds on a daily basis. Even with the capacity issues, PSW's are still not met. This intersection is offset and has a skewed alignment, enlarging the intersection and slowing operations.

By 2040, the westbound queue on Main Street will extend to and interfere with operations at Depot and East Main Street.

Maneuvering

There are a number of maneuvering issues in Rogue River, for large trucks, vehicles, emergency vehicles, or transit.



OS9 Depot/Pine/Oak Alignment

For operations and sightlines, Depot Street should be realigned to line up with Pine or Oak Street. Note issue discussed in safety section.

OS10 W Main/E Main Alignment

A straighter alignment is needed at West and East Main at Pine Street. There is a tight turn required to turn right onto East Main Street from Pine Street which can create off-tracking issues that can interfere with waiting left-turn vehicles. Off-tracking is different paths of front and rear wheels, especially when a longer vehicle corners. The rear wheels take a shorter and straighter path, possibly intruding into a lane or sidewalk. Off-tracking is also evident from East Main to Pine Street, leading to left turning vehicles interfering with waiting northbound vehicles. The East Main to Pine street movement is the preferred route to access the interchange due to congestion at Depot and Pine Street. This location is also discussed in capacity.

OS11 I-5 Emergency Turn Around

There is a lack of turn arounds on I-5 between Rogue River and Grants Pass for emergency vehicles. As noted by emergency responders from Rogue River any incident that is responded to on I-5 requires long out-of-direction travel to get to or get back from which could affect response time to calls within the City. This section of I-5 is on separated roadbeds so a connection between the two directions is likely difficult.

OS12 Southbound Off Ramp onto Depot Street

Trucks with a large turning radius have trouble turning left from the southbound I-5 ramp onto Depot Street. Trucks may hit vehicles waiting to turn left from Depot Street onto the I-5 southbound ramp. This has been noted in a previous TSP. Realigning this approach may be an issue. The Rogue River Greenway trail is between the river and the ramp.

Bicycle Facilities

With such a great representation of bicycle ridership, it is essential to keep that going with further improvements in bicycle facilities. These are some identified deficiencies that need to be addressed along with locations for bicycle facilities to be highlighted.

No Markings

There are no official bicycle facilities with pavement markings within the City with the exception of OR99 and Depot Street southwest of the I-5 southbound ramp. Anything that looks like a bicycle lane is actually a paved shoulder. There is also a lack of marking to show when vehicles and bicycles are sharing the same lanes, such as on East Main Street west of Wards Creek Road. The result is that there are no expectations of drivers that bicycles will be on the shoulder or in the travel lanes. In wider shoulder locations, vehicle parking does occur. Where it looks like a bicycle facility/shoulder is provided, frequently this space can be blocked by residential garbage and recycling carts.

Striped paths were created at some point in town. They do not substitute for a bicycle lane or sidewalk. They are too narrow to be considered a bicycle lane. The striped paths lack a raised curb and width to be considered a sidewalk. Either mode would benefit from more of a separation from vehicular traffic. Garbage carts can block the path, rather than in driveways. These paths were noted on 3rd and West Main Street.

The ideal Bicycle Level of Traffic Stress (LTS) is considered to be LTS 2, the greatest range of users have a comfortable experience. LTS 1 is preferable in areas surrounding elementary and middle schools to allow for the safest experience for children. The shaded areas in the table below show LTS levels that are higher than desired.


B2
PINE ST.
B1
Rivers Edge
arter School
Rogue River
Elementary
School
B9
B3
Rogue
River
B5
B8
B6
B4
B7
OGUE RIVER HWY NO. 060
Valley of
the Rogue
State Park

B1 Pine Street

Pine Street "bicycle lanes" are narrow. The Pine Street paved shoulder/"bicycle lanes" run along both sides of Pine Street beyond the elementary and middle schools and into the suburban area until it turns into East Evans Creek Road. While LTS 2 is sufficient for most users, LTS 1 is preferred for sections at least within a half-mile of an elementary or middle school.

B2 East Evans Creek Road

The paved shoulder on East Evans Creek Road and past the high school is only about four feet wide in most places, and while potentially inviting, it is functionally too narrow for safe bicycle riding and has a LTS 4 rating as a result.

B3 West Main Street

West Main Street has paved shoulders that could be used as bicycle facilities, although it is too narrow. In some locations east of East Evans Creek Road, there is no sidewalk and a section of the pavement is striped to substitute for a combination walking path/possible bike lane.

B4 East Main Street

East Main Street needs to show shared path markings for vehicles and bicycles from Ward Creek west. East Main Street east of Ward Creek has a wider shoulder on the north side to Wards Creek Road that could be converted into a four to six foot bicycle lane.

B5 Broadway Street North

Broadway St north of 1st Street needs to have bicycle lanes

B6 Broadway Street South

Broadway St south of 1st Street needs to have bicycle lanes on both sides of the street and is a LTS 3 section.

B7 N River Rd

North River Road south of Classick Drive could use bicycle lanes given the auto speed limit in this LTS 3 section instead of a wider paved shoulder that allows for parking that is not necessary given the development patterns.

Vehicle in shoulder

B8 Oak Street

Oak Street needs to have bicycle lanes.

B9 3rd Street

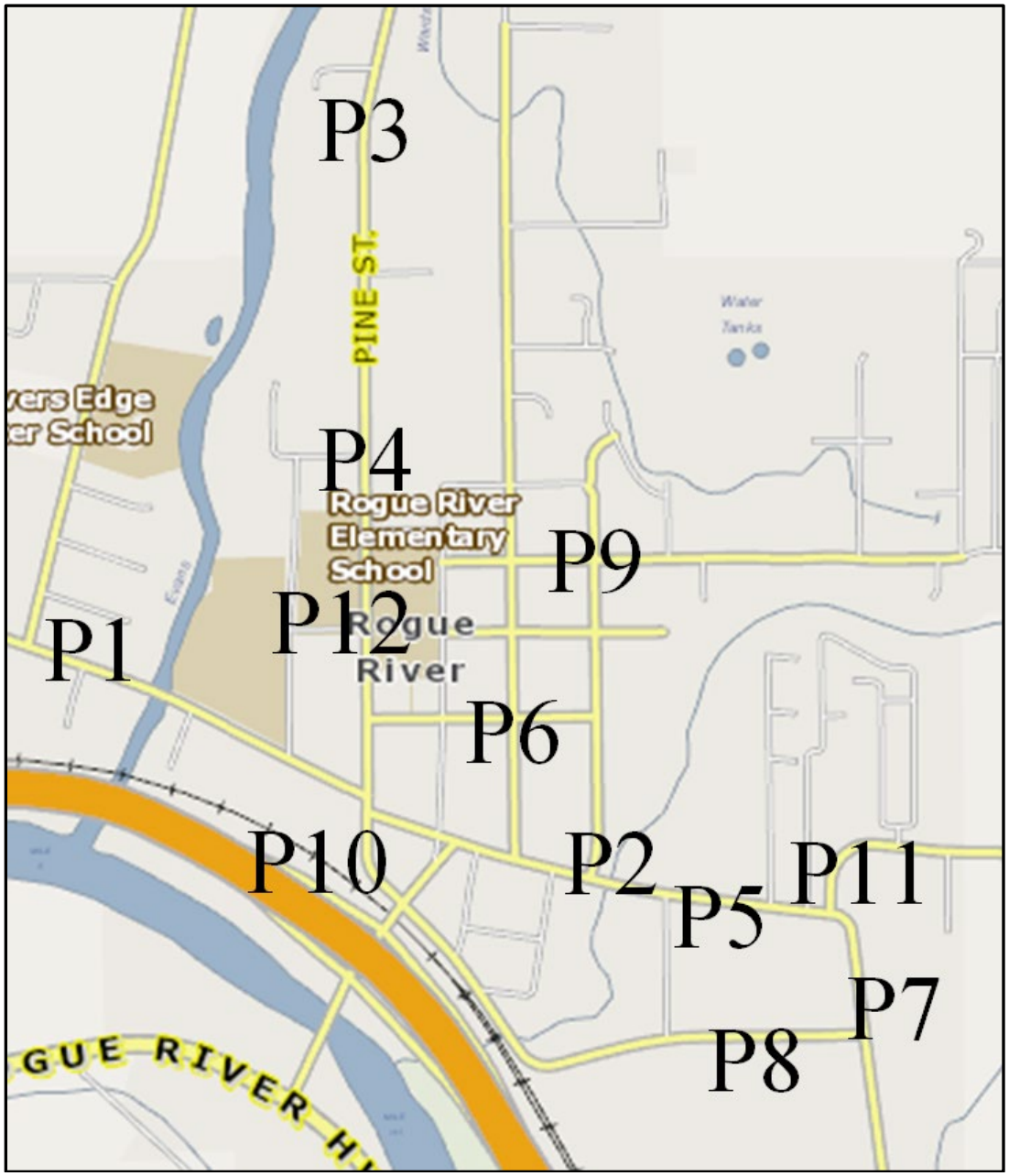
3rd Street is planned to be an important east-west route for all modes in the future. There should be bicycle lanes on both sides of 3rd Street.

Pedestrian Facilities

Encouraging numbers of pedestrians were recorded in the traffic counts. Fixing deficiencies and further investments like the Rogue River Greenway, keep that momentum for a healthy and growing city.

Availability of sidewalk facilities in the study area is inconsistent. There is a lack of ADA (Americans with Disabilities Act) ramps or facilities on almost all sidewalks. Wider sidewalks are needed for higher-use areas (schools and downtown) as well as room around obstacles (power poles, mail boxes, signs, benches, and fences).

These are some identified deficiencies that need to be addressed.



P1 West Main Sidewalk Continued

West Main Street has sidewalk to the west of Pine Street for a block (not by football field) and a striped walking path on the north side road shoulder extending to East Evans Creek Road. The sidewalk should be continued west on Foothill Blvd to the UGB.

P2 East Main Street

East Main Street has sidewalk facilities on the south side from Rogue Lane to Ward Creek. Sidewalk does not exist with the raised curb on the south side of East Main Street across from Wards Creek Road.

P3 Pine Street/E Evans

From Short Street north, sidewalk only exists on the west side of Pine Street for a short distance. From Creek View Lane north, there are no sidewalk facilities on Pine Street/ East Evans Creek Road, central to access to the high school.

P4-6 Marked Crosswalks

Drivers are not observing and properly yielding to pedestrians at marked crosswalks. Frequently, stops are not happening near schools (P4 other than signalized crossing), Main Street/N River Road (P5 near shopping area), and Broadway (P6 near 1st Street).

Figure P4

Figure P5

Figure P6

P7 N River Road Curb w/o Sidewalk, Light, and More

North River Road has a sidewalk on the east side from Wards Creek Road to a bit past Classick Drive. There is curbing for much of this distance on the west side, but no sidewalk. There is also a lack of lighting, especially for crosswalks. Note that there is a lack of ADA ramps, including at crosswalks.

P8 Classick Question

Classick Drive does not have sidewalks on much of it. Some sections have businesses, such as a coffee shop that would attract pedestrians. Some sections of Classick Drive have parking for large trucks. This truck parking area should be defined and planned with alternate paths where it is desired to have the sidewalk closed.

P9 3rd Street

3rd Street is planned to be an important east-west route for all modes in the future. There should be sidewalks on both sides of 3rd Street. Note how two pedestrians do not feel there is not enough space to walk side by side. Striped paths lack a raised curb and any physical or lateral separation from traffic. Garbage carts block the path, rather than in driveways. See more discussion on striped paths under Bicycle section.

P10 Pine Street Downtown

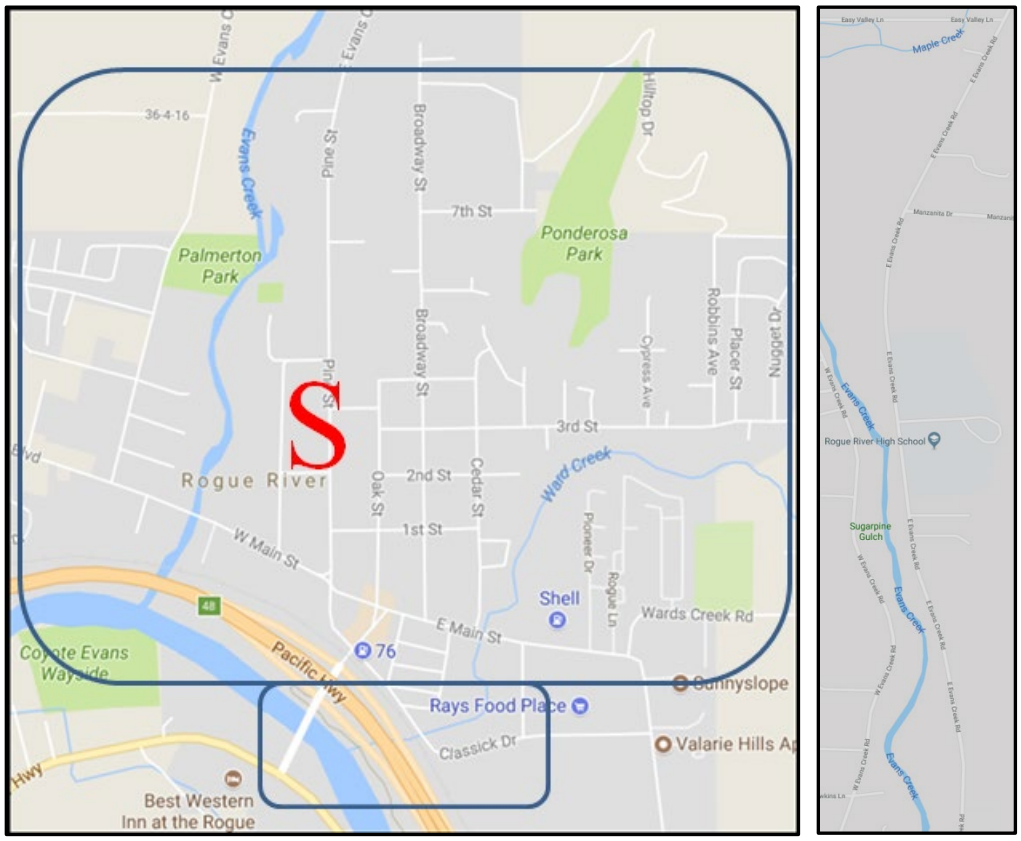
There are no sidewalks on the north side of Pine Street from Depot Street to East Main Street and south side for a portion of that distance.

P11 Wards Creek and Surrounding

Wider shoulders are an improvement; there needs to be sidewalks around the mall area. There should be sidewalks from the mall to the assisted living area and mobile homes.

P12 Safe Routes to School

Priority should be given to fixing gaps in sidewalks in the areas surrounding the elementary and middle school. The following map shows where sidewalks are needed. One block away from the elementary school there is a need for sidewalks (all directions but south).



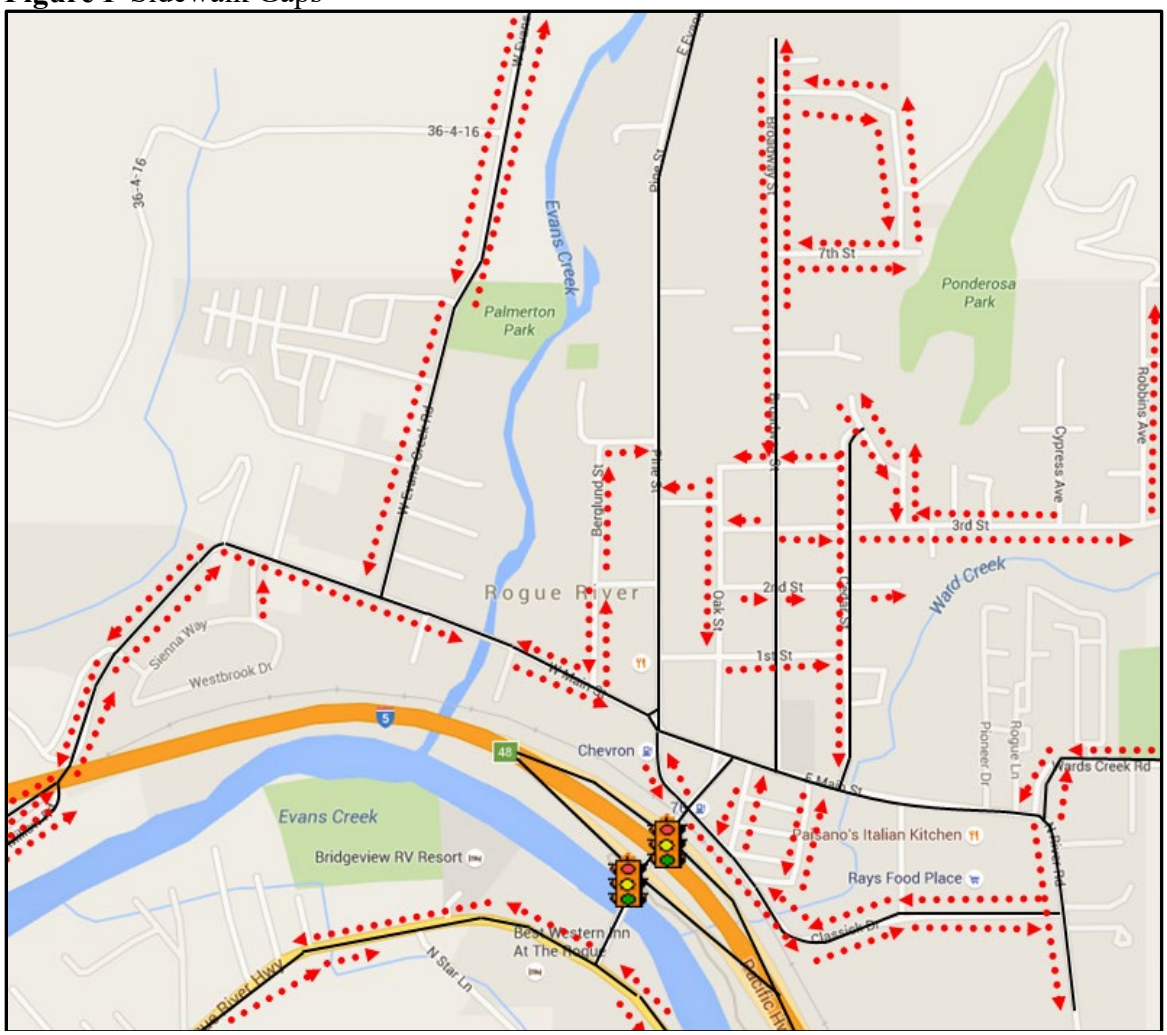
The map above has an "S" for the location of the east and west campus elementary school. The rectangles generally show what is within half a mile of the two schools. Priority should be given to having sidewalks within a ½ mile walk to the middle or elementary school. To the northwest it extends to BLM Road 36-4-16, a road 1000 feet north of Park Circle. West on Foothill Boulevard reaches to the newer development on

Westbrook Drive. The range extends south to just across the Depot Street Bridge to OR99. The ½ mile walk range would just about get to Gilmore Street. On East Main Street the distance reaches to Wards Creek Road. Also included in this distance is as far east on 3rd Street as Nugget Drive and as far north on Broadway as Valley View Drive or Creek View Lane on Pine Street. The ½ mile distance from the elementary school generally covers most of the developed area of Rogue River.

Working with the ½ mile range to school, there are several locations to work on. Most of West Evans Creek Road south of Road 36-4-16 needs sidewalks. Foothill needs sidewalk on the south side and some of the north side, including the striped path replaced. Classick Drive needs sidewalks, as well as streets to the north, including some of East Main Street. 1st, 2nd, 3rd, 4th, and 7th need sidewalks. This includes streets like Robbins Avenue. Broadway Street needs sidewalks north of 4th Street.

With the middle school at the high school, there is a need to look at East Evans Creek Road as far north as Easy Valley Lane and as far south as the 45MPH speed sign at 1308 East Evans Creek Road. A Junior High needs school zone signing to alert drivers that children may be walking or bicycling along the roadway. See P3 for sidewalk need.

Figure P Sidewalk Gaps



Transit

Rogue River transit is relatively poor and needs transit options for its residents.

T1 Infrequent Transit

There needs to be an internal city public transit circulator or dial –a-ride on demand service. The Rogue Valley Commuter line between Grants Pass and Medford has one stop at the Rogue River Community Center. There are fewer than 10 stops per day. Considerable walking is required from most residential areas to reach that location. This service is only useful for leaving the city and traveling to Grants Pass or Medford.

T2 Stop Placement

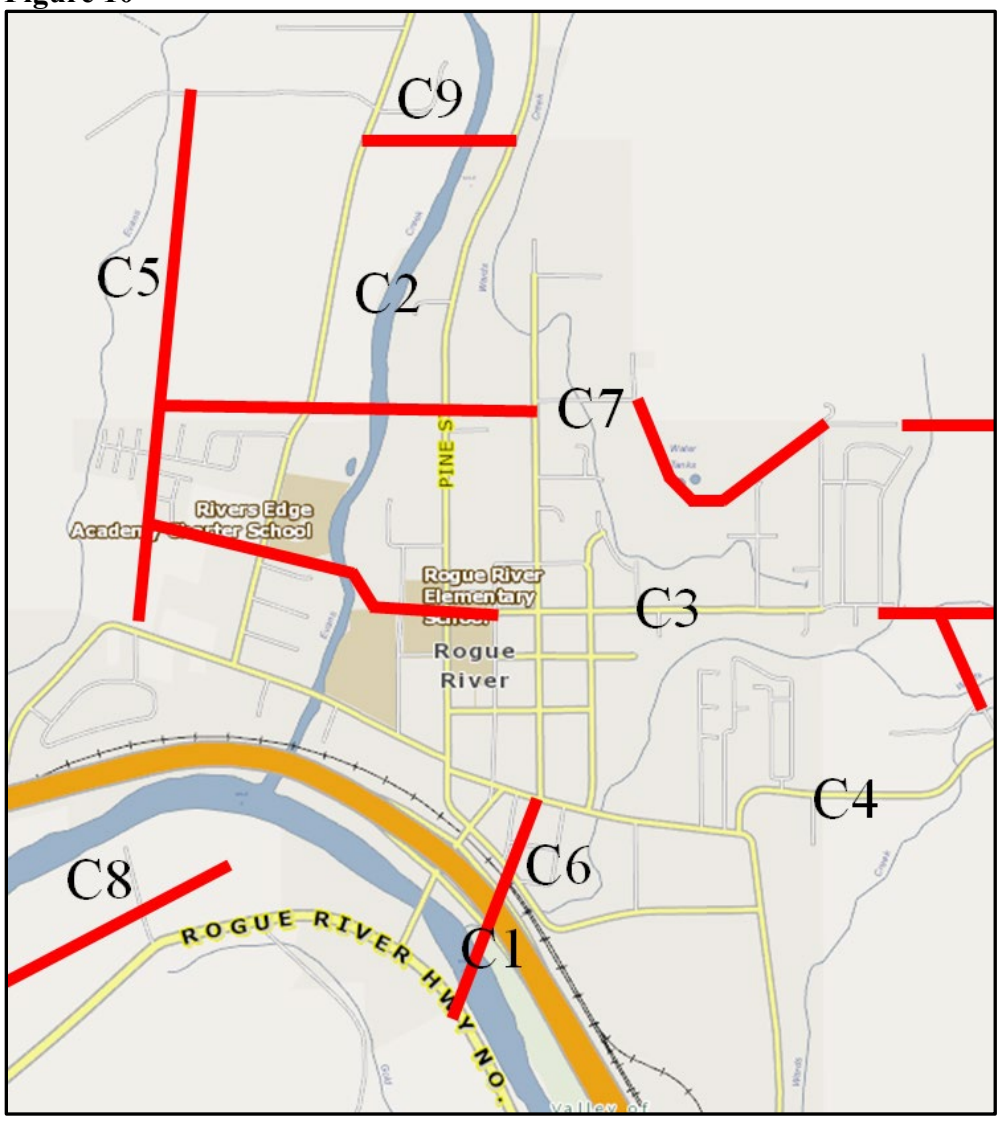
The Rogue Valley Commuter line is already noting the I-5 interchange congestion and would prefer a stop closer to the ramps. Alternatives should be considered where the commuter bus can stop but does not have to exit Rogue River using the Depot Street interchange.

Connectivity

Connectivity is an issue for most cities. There may be issues with how the city has grown in the past or the natural barriers that always existed: creeks, canyons, rivers, and other elements of nature. They may be manmade but under other jurisdictions: railroads, highways, or airports. It takes planning and work to ensure a livable environment that will sustain itself. Planning for growth is essential in this.

There is a need to strengthen the existing grid network to reduce traffic on existing major streets. The next figure shows concept locations to improve connectivity.

Figure 10



C1 Connectivity over Rogue River

Building across a natural boundary creates connectivity issues. As the City of Rogue River grows and expands, it will need a street layout that provides connectivity. As the area of the City develops on the south side of Rogue River, existing problems through the interchange area will increase that much faster. A second crossing of Rogue River would be beneficial in alleviating some of the lack of space. Broadway could be extended

across the Rogue River. The Broadway extension/bridge could be part of a split diamond interchange with new I-5 ramps to the south. There is also a possible location to the northwest where Foothill Boulevard goes under I-5 to add ramps to/from the north.

C2 Connectivity Over Evans Creek

Connections are needed across Evans Creek at different locations for all modes or one for all modes and one for just bicycle/pedestrians. Possible locations are 3rd Street, 7th Street, and further north. This will cut down out of direction travel and reduce travel and burden on the intersection of Main and Pine Street.

C3 3rd Street Extension to West

3rd street should be extended across Evans Creek. 3rd Street should be realigned to pass just past the school buildings to eventually connect to West Evans Creek Road north of Walnut Drive. This will create an operable through alignment. An alternative multi use pedestrian and bicycle path should also be considered between W Evans Creek Road and Pine Street.

C4 3rd Street Extension to East

Ward Creek is a barrier to getting to the east part of town. There are a cluster of developments to the south of Ward Creek that will prevent east to west connections. 3rd Street should be extended east across Ward Creek and connect with Wards Creek Road.

C5 Grow with a Grid

Start a grid network on the west side of Evans Creek Road with a road that parallels W Evans Creek Rd.

C6 Broadway Extension

Broadway could extend south of E Main Street by making a four-way intersection and utilizing the Park Street alignment. The Classick /Madrone Street intersection should also need to be realigned to eliminate the skewed intersection alignment at Classick.

C7 7th Street Extensions

7th Street should be extended in both directions, past Ponderosa Park to Tenney Drive (use Scenic Drive), past Evans Creek.

C8 Neighborhood Street between OR99 and Rogue River

Set up a backage road between OR99 and the river that would help minimize additional future conflict points on OR99. The parallel street would have a lower speed limit and more of a community element. There would be sidewalks, street lighting, and other amenities that OR99 does not offer.

C9 Powerline Bridge

Future continuation of a grid system could be to create a roadway that goes from E Evans Creek Road to West Evans Creek Road.

C10 Code Updates

Future city code should require connectivity or two points of entry into a development from different streets. Entry points to be reviewed for connectivity and safety.

Bridges

Bridge Conditions Report states that bridges in the area are classified as "Not Deficient." As with other bridge structures the bridges in this area are seismically vulnerable.

The ODOT 2016 Bridge Conditions Report states that area bridges are in fair condition and classified as "Not Deficient." Also, the Bridge Sufficiency Rating map showed bridges in the study area to be in the range of 58.9 to 93, greater than the poor condition threshold of 45. However, the I-5 bridges over Depot Street, Evans Creek, and Foothill Boulevard are noted to be seismically vulnerable and the Depot Street Bridge over the Rogue River is noted as potentially seismically vulnerable.

The Main Street Bridge across Ward Creek is not deficient, but in part functionally outdated as it requires bicycles and vehicles to share a lane on the structure. Even if there were bicycle lanes on Main Street, bicyclists would still need to share the vehicular lane at the narrow bridge. The Classick Drive Bridge over Ward Creek is also functionally obsolete, narrow without sidewalks or bicycle lanes.

Table 1 Bridge Deficiencies

#	Bridge	Issue
B1	Main St/Wards Creek Bridge	*Too narrow to accommodate separation between bicycles and vehicles.*
B2	Classick Dr/Wards Creek Bridge	*Too narrow to accommodate all modes.*
B3	I-5 NB/Depot St	Seismically vulnerable
B4	I-5 SB/Depot St	Seismically vulnerable
B5	I-5/Evans Creek	Seismically vulnerable
B6	I-5/Foothills Blvd	Seismically vulnerable
B7	Depot St/Rogue River Bridge	Potentially seismically vulnerable

Pavement Conditions

Pavement condition itself is an issue for creating connectivity. The condition of a roadway is a symbol of a community's health. I-5 is in very good condition and OR99 is in fair condition. With a condition of fair, it is expected that some areas of OR99 will need a 2" resurface or chip seal in the 20 year horizon, likely in the medium term period (5-10 years out). The streets of Rogue River are overall in good condition. The following table shows likely needs within the 20-year planning horizon.

Table 2 Pavement Deficiencies

#	**Street**	**Needs**
P1	Broadway St	*Requires minor crack seal beyond 5-10 years*
P2	Depot St	*Requires crack sea l / seal coat / chip seal beyond 5-10 years*
P3	Wards Creek Rd	*Requires crack sea l / seal coat / chip seal beyond 5-10 years*
P4	Foothill Rd	*Requires minor crack seal beyond 5-10 years*
P5	OR99	Fair condition, thus will require resurfacing in the 20 year horizon.

Summary

There are a number of identified deficiencies within the city, many due to the constrained areas in and around the interchange area and the central core of Rogue River. As the roadway alignment exists there will be very little room for growth for this city without causing more congestion and safety issues. Substantial improvements are needed for the pedestrian, bicycle and transit modes to help ensure for future livability.

The next steps will include a review by the PMT and PAC. There will be a public open house which will complete the base set of deficiencies to be considered for alternatives and resolutions.

Section 7 - Solutions

Overview

This section proposes transportation improvements to address Rogue River's transportation system deficiencies. This analysis includes alternatives for motorized and non-motorized travel modes. Many alternatives include a range of options addressing deficiencies at various cost points. Suggested revisions to roadway functional classification system are also included.

Functional Class Revision

Street functional classification is part of how streets work together to make a network. Principal arterials provide long distance connections between large populous areas with high volumes and high speeds. Interstate 5 is the only principal arterial in Rogue River. Minor arterials primarily serve longer trips with in a city and typically connect principal arterials with collectors. Pine Street and OR99 are examples of minor arterials. Arterials minimize direct property access and have low driveway densities. Arterials offer the most direct routes for walking and bicycling, but facilities are needed to separate them from high speed vehicular traffic.

Collectors connect local streets to arterials and balance travel needs with property access. Collectors will have slower speeds, lower volumes, and greater driveway densities than arterials. Third Street and Broadway Streets are example of a collector. Minor collectors have noticeably shorter lengths than a major collector and will carry lesser volumes. With lower auto traffic volumes and speeds there is lower levels of stress for pedestrians and bicyclists. However, separate facilities are still needed. With higher driveway density there are more points of jeopardy of a collision with a vehicle.

Local streets prioritize local access over travel speed or distance. Driveway densities are highest on local streets. Local streets will have the lowest speeds and volumes, providing low-stress walking and bicycling. Separate bicycle facilities are usually not needed, but there is still a need for pedestrian facilities.

While existing city functional classifications are close to federal/ODOT functional classifications, this TSP update should make them compliant. The only change is to split the "Urban Collector" classification into "Urban Major Collector" and "Urban Minor Collector." This is needed for federal and state reporting and streamlining Federal Aid System roadway funding. This is occurring for TSP updates across the state. In addition, city design standard classifications in Municipal Code Section 16.20.120 should also be updated. The recommended roadway classification changes for the City of Rogue River are shown below in Table 1. Table 8 shows proposed classifications for new roadways from the Connectivity section, starting on page 77.

Table 1: Proposed Functional Classification Changes

Existing Roadway[1]	Existing Classification	Proposed Classification
3rd Street	Urban Minor Collector	Urban Major Collector
East Main Street	Urban Collector	Urban Minor Arterial
West Main Street	Urban Collector	Urban Minor Arterial
West Evans Creek Road	Urban Minor Collector	Urban Major Collector
2nd Street	Urban Minor Collector	Local
Cedar Street	Urban Minor Collector	Local
Oak Street	Local	Urban Minor Collector
Broadway Street	Urban Minor Collector	Urban Major Collector
Robbins Avenue	Local	Urban Minor Collector

[1]Applies to entire length of roadway segment

Table 2: Classifications Applied to Future Roadways

Proposed Roadway [1,2]	Proposed Classification
Scenic Drive (C7)	Urban Minor Collector
Blue Ridge Drive over Ward Creek (C4)	Urban Major Collector
3rd Street over Evans Creek3 (C2)	Urban Major Collector
7th Street over Evans Creek (C2)	Urban Minor Collector
Street parallel to East Evans Creek Road (C5)	Urban Minor Collector
Broadway Street extension (C6)	Urban Major Collector
Gardiner Street for pedestrians and bicyclists (C6)	Local
7th Street from Pine Street to Broadway Street (C7)	Urban Major Collector
Other 7th Street additions (C7)	Urban Minor Collector

[1] Applies to whole length of roadway if limits not specified.
[2] Reference to specific connectivity option shown in parentheses.
[3]Third Street needs to be realigned to a continuous alignment at Oak Street.

Alternatives

Alternatives were developed to address existing and future deficiencies of Rogue River. This allows for a deficiency to be associated with its potential solution in the alternative phase. Except for Pavement, there are multiple alternatives covering a variety of solutions and cost points. Some alternatives require other alternatives to be chosen or may affect other intersections. Some alternatives have been dropped or combined through analysis, thus some values are skipped.

Each solution type is led by a summary table listing alternatives. This table includes a short description, 2040 analysis result (if applicable), cost estimate and responsible agency or party. Following each table, detailed sections for each alternative follow. These sections include a restatement of the deficiency, a description including maps/diagrams as appropriate, benefits, a cost estimate, and potential impacts.

The benefits section includes results of any operational analysis. This includes qualitative multimodal assessment methodology for pedestrians and transit, level of traffic stress for bicycles, volume-to-capacity analysis, and crash reduction factors. See

Appendix A for individual analysis for each alternative as applicable. General qualitative benefits, such as safety and comfort, were added as needed.

Cost estimates used 2007 unit costs from ODOT's Traffic –Roadway Section. Estimates were augmented by various ODOT and local staff in active transportation, transit, bridge, roadway, and traffic disciplines, helping to broaden the scope of alternatives applicable in a multimodal TSP. As necessary, unit cost estimates were raised to 2017 dollars using the 2018 National Highway Construction Cost Index (NHCCI).

The final cost estimates in this section include general cost allowances for project contingencies, preliminary engineering, construction engineering, mobilization and temporary traffic control. The cost estimates do not include: right-of-way, permitting, drainage improvements, water quality, surface grinding/other surface preparations beyond what is listed, or any environmental mitigation. Many of these are unknowns at this time. See Appendix B for individual cost worksheets for alternatives and the master cost estimate spreadsheet.

The key considerations and impacts section cover items to be put into perspective for each alternative. This includes potential environmental or riparian impacts, right-of-way considerations, parking impacts, and modal impacts. As applicable, there may be notes regarding potential conflicts with or requirements for alternatives.

Pedestrians

The choice of pedestrian improvement should be carefully considered. In lower speed areas a sidewalk may be applicable, as bicyclists are able to share the vehicular lane. With sidewalks, the need for drainage should be considered. If a city decides upon sidewalks and later adds bicycle lanes, existing sidewalks would likely need to be destroyed and thus create a cost of new sidewalks along with bicycle lanes unless sidewalks were placed in their ultimate location initially. Sidepath and shoulder options were included to provide improvements at least on one side of a roadway and/or to limit construction costs and right-of-way impacts. Street lighting options were added were needed to supplement the options and improve safety of vehicles and pedestrians in these sections. Table 3 shows the pedestrian alternatives and options.

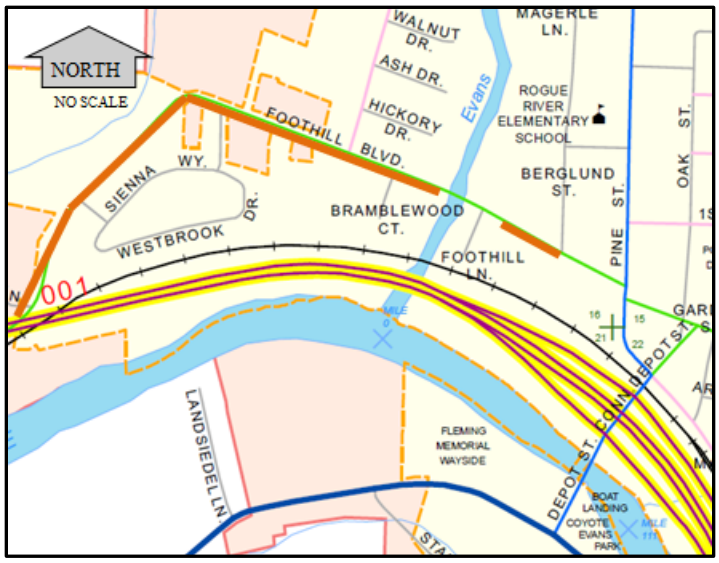
Table 3: Pedestrian Alternatives & Options

Option	Description	2040 Rating	Estimate	Agency
P1 West Main St/Foothills Blvd, Pine St - City Limits				
A	6' sidewalk	Fair	$1,182,000	City
B	10' sidepath	Very Good	$378,000	
C	Buffered paved shoulders	Fair	$3,682,000	
P2 East Main Street, Rogue Ln - N River Rd				
A	6' sidewalk	Fair	$1,091,000	City
B	10' sidepath	Very Good	$378,000	
P3 Pine Street/E Evans, Short St - Creek View Ln - high school				
A	6' sidewalk	Fair	$754,000	City/ County
B	10' sidepath	Very Good	$768,000	
P4-6 Marked Crosswalks, school, mall, City Hall				
A	Crosswalk markings	Good	$108,000	City
B	Pedestrian-activated beacon	Very Good	$225,000	
C	Pedestrian refuge	Very Good	$100,000	
P7 North River Road Curb, Main St - UGB				
A	6' sidewalk	Fair	$618,000	City
B	Street lighting	Very Good	$122,000	
C	Pedestrian refuge	Very Good	$289,000	
D	6' sidewalk/10’ sidepath	Very Good	$667,000	
E	Buffered paved shoulder	Fair	$6,240,000	
P8 Classick Drive, Depot St - N River Rd				
A	6' sidewalk	Fair	$740,000	City
B	10' sidepath	Very Good	$352,000	
C	Street lighting	Very Good	$122,000	
P9 3rd Street, Oak St - City Limits				
A	6' sidewalk	Fair	$1,547,000	City
B	10' sidepath	Very Good	$384,000	
C	Street lighting	Very Good	$24,000	
P10 Pine Street Downtown, Depot St - E Main St				
A	6' sidewalk	Fair	$130,000	City
B	Crosswalk markings	Good	$105,000	
P11 Wards Creek Road, E Main St - City Limits				
A	6' sidewalk	Fair	$439,000	City
B	10' sidepath	Very Good	$96,000	
C	Buffered paved shoulder	Fair	$936,000	

P1 West Main Street/Foothills Boulevard

Deficiency: West Main Street has sidewalk to the west of Pine Street for a block (not by football field) and a striped walking path on the north side road shoulder extending to East Evans Creek Road. The sidewalk should be continued west on Foothill Blvd to the city limits. This section of roadway has a posted speed of 25-45mph. The 2040 ADT for this street is projected to be 6500 near the school, but 1700 on Foothills Boulevard.

Vicinity Map



<u>Improvement Option A:</u> <u>Build six foot sidewalks</u>

Description: Six foot sidewalks would be built from Pine Street to the city limits along West Main Street and Foothills Boulevard. Add ADA ramps as needed on corners.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. This will create non-automobile connections to the new development on the western edge of the city along Foothills Boulevard. The sidewalks will help protect pedestrians from vehicles veering out of their lane. This improves this street from poor to fair.

Preliminary Cost Estimate: $1,182,000

Key Considerations/Impacts: This option will require additional right-of-way, a consideration. The street width that exists will not facilitate this option and Project B3. With twelve foot travel lanes there will not be any detrimental effects to the vehicular traffic. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies are not improved.

<u>Improvement Option B:</u> <u>Create 10’ sidepath</u>

Description: A 10’ sidepath would be built from Pine Street to the city limits along West Main Street and Foothills Boulevard.

Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than Option A. This improves this street from poor to very good.

Preliminary Cost Estimate: $378,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts as the current street width will not accommodate this option. If origin and destination of a walking trip both exist opposite of the path, then extra crossings will expose pedestrians to vehicle traffic. Buffer types and widths need to be considered where the path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Design considerations should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Improvement Option C: Create buffered paved shoulders

Description: Add a seven foot paved shoulders and a two foot buffer from Pine Street to the city limits along West Main Street and Foothills Boulevard.

Benefits: Buffered Paved Shoulders would give a space for bicyclists and pedestrians, similar to current striped pathways already in Rogue River, but with increased separation from motor vehicles. This improves this street from poor to fair.

Preliminary Cost Estimate: $3,682,000

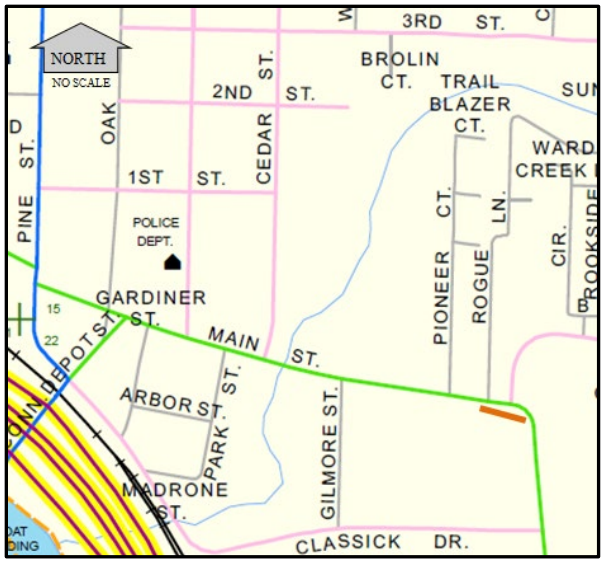
Key Considerations/Impacts: This option will require additional right-of-way. The shoulder will not have bicycle designations to stop vehicles from parking in them; special no parking signs will be needed for the length of the improvement. Buffer types and widths need to be considered where the path crosses private accesses. Buffered Paved Shoulders are not exclusive for pedestrians and bicyclists, vehicles can be in that space too.

Notes: This is in the same area as Project B3. Project B3 Option A or B will require Project P1 Option A for the pedestrian mode. If Option B is chosen, then that will supplant B3 Option A/B and save the costs of those options.

P2 East Main Street

Deficiency: East Main Street needs sidewalk facilities on the south side from Rogue Lane to N River Road. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be 9800.

Vicinity Map



Improvement Option A: Build six foot sidewalks.

Description: Build a six foot sidewalk would be built for 170 feet. Install ADA ramps where needed.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. Providing sidewalks should help pedestrians traveling on this street or going to the mall area, as well as create a non-automobile connection. The sidewalks will help protect pedestrians from vehicles veering out of their lane. This improves this street from poor to fair.

Preliminary Cost Estimate: $1,091,000

Key Considerations/Impacts: This option will require additional right-of-way, a consideration. Project is likely to use curb that exists at this time. With twelve foot travel lanes there will not be any detrimental effects to the vehicular traffic. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies are not improved.

Improvement Option B: Create 10' sidepath

Description: A ten foot sidepath would be built for 170 feet.

Benefits: Providing a sidepath should help pedestrians traveling on this street or going to the post office. Pedestrians will have a safe space to walk away from traffic. A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This improves this street from poor to very good.

Preliminary Cost Estimate: $27,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts as the current street width will not accommodate this option. Buffer types and widths need to be considered where the path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Notes: This project is near P11 and P7. The option chosen for P7 should be considered here. Sidewalk or sidepath from P7 could be continued here. One should consider if ever wanting to place a roundabout here; it affects what shape the sidewalk should be in.

P3 Pine Street/E Evans

Deficiency: From 300 feet north of Short Street, sidewalk only exists on the west side of Pine Street to Creek View Lane. From Creek View Lane north, there are no sidewalk facilities on Pine Street/ East Evans Creek Road, access to the middle school and high school. This section of roadway has a posted speed of 25-45mph, even in the school zone. The 2040 ADT for this street is projected to be 3500.

Vicinity Map

Improvement Option A: Build six foot sidewalks.

Description: Build a six foot sidewalk would be built from beginning of roadway north to middle school.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. Providing

sidewalks should help pedestrians traveling on this street or going to the middle school. The sidewalks will help protect pedestrians from vehicles veering out of their lane. On the Pine Street section the sidewalks were rated fair, further up on East Evans Creek Road the pedestrian facilities were rated very poor. This option would bring the pedestrian facilities up to fair.

Preliminary Cost Estimate: $754,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts as the current street width will not accommodate this option. In some areas this may also require retaining walls. Utility poles on the west side of the street may be an issue. It is advised to leave the travel lane widths at 12 feet. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies up to the middle school are not improved.

Improvement Option B: Create 10' sidepath

Description: A ten foot sidepath would be built from beginning of roadway north to middle school.

Benefits: Providing a sidepath should help pedestrians traveling on this street or going to the middle school. Pedestrians will have a safe space to walk away from traffic. A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. On the Pine Street section the sidewalks were rated fair, further up on East Evans Creek Road the pedestrian facilities were rated very poor. This option would bring the pedestrian facilities up to very good.

Preliminary Cost Estimate: $768,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts as the current street width will not accommodate this option.. In some areas this may also require retaining walls. Pedestrians and bicyclists would be safer traveling on a sidepath. The east side is chosen as it will not interfere with utility poles and have fewer slope issues. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Notes: This is in the same area as Project B2.

P4-6 Marked Crosswalks

Deficiency: Drivers are not observing and properly yielding to pedestrians at marked crosswalks. Frequently, stops are not happening near the elementary school (P4 other than signalized crossing), with an 2040 ADT of 8000. Legal stops are also not happening at Main Street/N River Road (P5 near shopping area), with a 2040 ADT of 9800. Stops are also not occurring at Broadway (P6 near 1st Street), with a 2040 ADT of 3000. There is a need for continental mid-block crossings. These roadways have a posted speed of 25mph, with the exception of the school zone.

Improvement Option A: Install continental crosswalks and signing

Description: Continental crosswalks and related signing would be added to all three locations.

Benefits: The continental crosswalk is more visually recognized from vehicle drivers, so expectation for pedestrians is increased making yielding more likely. The crosswalks and signing will improve pedestrian safety. This option is rated good for pedestrians. A continental crosswalk has a Crash Reduction Factor (CRF) of 0.15.

Preliminary Cost Estimate: $108,000 ($36,000 for each site)

Key Considerations/Impacts: This will make the crossing locations more obvious to drivers so that they will yield to pedestrians when needed.

Improvement Option B: Install pedestrian-activated beacon and crosswalk

Description: Install a pedestrian-activated beacon that is used at mid-block crossings in addition to continental crosswalks. .

Benefits: The continental crosswalk is more visually recognized from vehicle drivers, so expectation for pedestrians is increased making yielding more likely. The activated beacon gives extra visibility for higher traffic locations which increases the yielding rate beyond Option A. This option is rated very good for pedestrians. A continental crosswalk has a Crash Reduction Factor (CRF) of 0.15. A pedestrian beacon has a CRF of 0.55.

Preliminary Cost Estimate: $225,000 ($75,000 for each site)

Key Considerations/Impacts: This will make the crossing locations more obvious to drivers so that they will yield to pedestrians when needed. This option is likely more relevant to higher volume locations such as in Project P4 and P5.

Improvement Option C: Install pedestrian refuge island with beacon and crosswalk

Description: Install a refuge island at mid-block crossings along with a pedestrian activated beacons and continental crosswalk striping

Benefits: The continental crosswalk is more visually recognized from vehicle drivers, so expectation for pedestrians is increased making yielding more likely. The activated beacon and refuge combination gives extra visibility for higher traffic locations which increases the yielding rate beyond Option A or B. The refuge island shortens the crossing distance and allows pedestrians to cross one direction at a time with will improve safety.

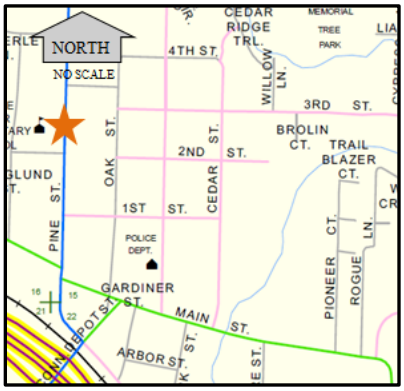
This option is rated very good for pedestrians. A pedestrian refuge has a Crash Reduction Factor (CRF) of 0.31. A pedestrian Beacon has a CRF of 0.55.

Preliminary Cost Estimate: $100,000

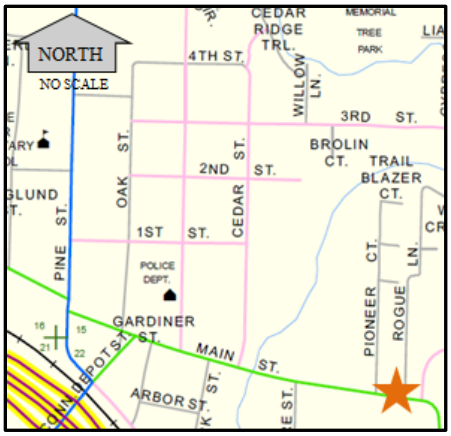
Key Considerations/Impacts: This will give pedestrians and bicyclists a safe place to cross. This will make the crossing locations more obvious to drivers so that they will yield to pedestrians when needed. This option is only relevant to Project P5 based on street width and projected volumes.

Notes: Project P4 in same location as Project B1.

P4 School
Option A or B

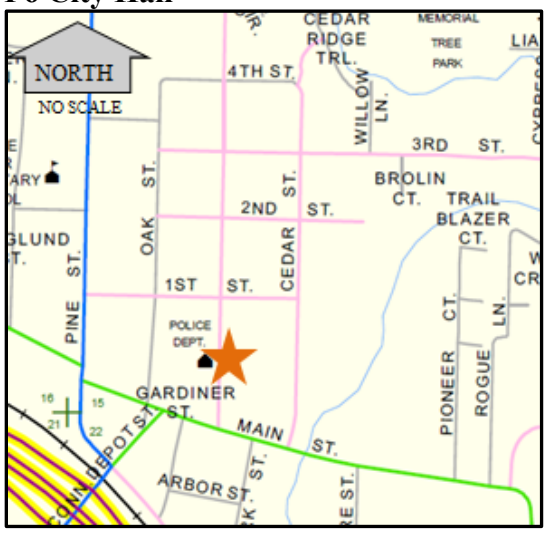


P5 East Main /Mall
Option A, B, or C. This is the only location eligible for Option C.



P6 City Hall
Option A or B

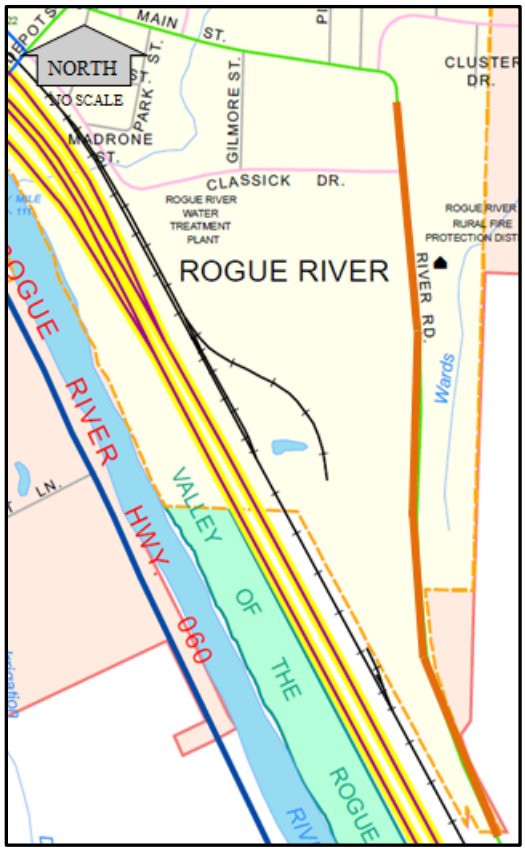
P6 City Hall


NORTH
NO SCALE
CEDAR RIDGE TRL.
MEMORIAL TREE PARK
4TH ST.
WILLOW LN.
3RD ST.
BROLIN CT.
TRAIL BLAZER CT.
2ND ST.
OAK ST.
CEDAR ST.
1ST ST.
PINE ST.
POLICE DEPT.
GARDINER ST.
MAIN ST.
DEPOT ST.
ARBOR ST.
PIONEER CT.
ROGUE LN.

P7 North River Road

Deficiency: North River Road has a sidewalk on the east side from Wards Creek Road to a bit past Classick Drive. There is curbing for much of this distance on the west side, but no sidewalk. There is also a lack of lighting, especially for crosswalks. Note that there is a lack of ADA ramps, including at crosswalks. There is an attraction, Mountain of the Rogue Mt Bike trailhead that is just outside of the UGB. This recreational facility should have a defined access with a path or sidewalk into town. This section of roadway has a posted speed of 25-45mph. The 2040 ADT for this street is projected to be between 3500 and 3100.

Vicinity Map



Improvement Option A: Build sidewalks & ADA ramps

Description: Six-foot sidewalks would be built on the west side of North River Road from East Main Street to Classick Drive and then both sides to the UGB.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street which will improve comfort and safety separated from vehicular traffic. This option is rated fair for pedestrians.

Preliminary Cost Estimate: $618,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts. The curb in place will likely be utilized. This option should be coordinated with P2 sidewalk construction on East Main Street to avoid leaving a gap in the mall area.

With eleven foot travel lanes there will be small effects to vehicular traffic. Bicyclist needs are still not met.

Improvement Option B: Add street lighting

Description: Install street lighting from East Main Street to the UGB, illuminating pedestrians, bicyclists, and vehicles turning in and out of driveways.

Benefits: This will help all modes to be more visual to each other at night, improving safety. This will give urban-area type clues to drivers, which will have them more likely to expect bicyclists and pedestrians as well as turning vehicles. This should slow some vehicles that don't realize they are coming into town. This option is rated very good for pedestrians. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

Preliminary Cost Estimate: $122,000

Key Considerations/Impacts: Utility lines on the west side of the street should be considered.

Improvement Option C: Improve pedestrian crossings

Description: Install pedestrian refuge islands, advance signing, pedestrian activated beacons ADA-standard ramps will also be installed. This option is rated very good for pedestrians.

Benefits: The activated beacons and refuge combination gives maximum visibility for higher traffic locations, increasing yielding rate. A refuge island shortens crossing distance and allows for crossing one direction at a time. ADA-ramps allow crossings to be accessible for all users. This option is rated very good for pedestrians. A pedestrian refuge has a Crash Reduction Factor (CRF) of 0.31. A pedestrian Beacon has a CRF of 0.55. Crosswalks and advance warning signs have a CRF of 0.37.

Preliminary Cost Estimate: $289,000

Key Considerations/Impacts: Vehicular traffic traveling into town will be more likely to see signing or a beacon. Pedestrians crossing the street would be much safer with one of these improvements. Bicyclist needs are still not met with this solution.

Improvement Option D: Create sidewalk and sidepath

Description: A six foot sidewalk would be built on the west side of North River Road from East Main Street to Classick Drive. A ten foot sidepath would be built from Classick Drive to the city limits.

Benefits: A sidewalk and sidepath would give a comfortable separated space for bicyclists and pedestrians which will maximize use. The sidewalk and the sidepath fit the environment they are placed in. This option is rated very good for pedestrians.

Preliminary Cost Estimate: $667,000

Key Considerations/Impacts: The sidepath would use the space currently taken by truck parking so extra right-of-way needs will be minimized. Attention should be paid to

avoid interference with utility poles. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option E: Create buffered paved shoulders

Description: Add a seven foot paved shoulders and a two foot buffer**.**

Benefits: Buffered Paved Shoulders would give a space for bicyclists and pedestrians, unless vehicles park in the shoulder. This option is rated fair for pedestrians.

Preliminary Cost Estimate: $6,240,000

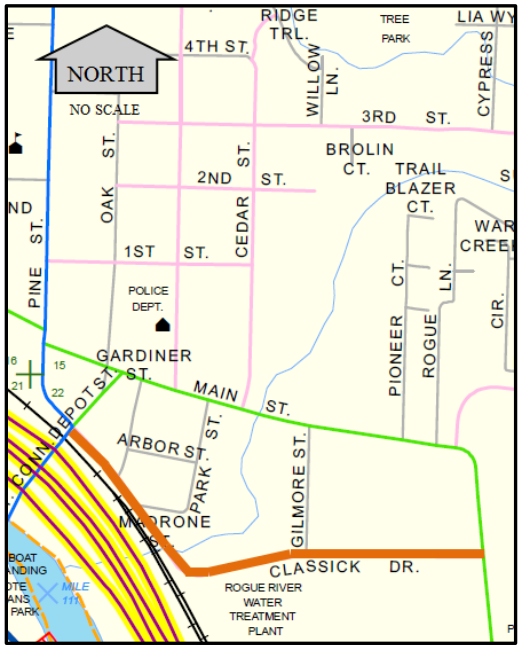
Key Considerations/Impacts: This option will require additional right-of-way. The shoulder will not have bicycle designations to stop vehicles from parking in them; special no parking signs will be needed for the length of the improvement. Buffer types and widths need to be considered where the path crosses private accesses. Buffered Paved Shoulders are not exclusive for pedestrians and bicyclists, vehicles can be in that space too.

Notes: Continental crosswalks may be considered at midblock crossings. This is the same location as B7. Option A is related to P2 Option A as sidewalks should be connected between East Main Street and North River Road without leaving a gap, if sidewalks are chosen. The UGB/city limits are 1400 feet north of the entrance to the Mountain of the Rogue trailhead, so there will be a facility gap unless Jackson County fills this in. Jackson County may see a sidepath as appropriate to fill this gap.

P8 Classick Drive

Deficiency: Classick Drive was built by the mill as a truck route. Therefore, it lacks sidewalks and lighting on much of it. Some sections have businesses, such as a coffee shop or US Post Office that would attract pedestrians. Some sections of Classick Drive have parking for large trucks. This truck parking area should be defined and planned with alternate paths where it is desired to have the sidewalk closed. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be between 2300 and 800.

Vicinity Map



Improvement Option A: Build six foot sidewalks.

Description: Six foot sidewalks would be built on both sides of Classick Drive from Pine Street to North River Road. This will add ADA ramps where needed.

Benefits: The sidewalks will provide a designated place for pedestrians traveling on this street, improving comfort and safety with separation from vehicular traffic. This option would improve the pedestrian facilities to fair.

Preliminary Cost Estimate: $740,000

Key Considerations/Impacts: Right-of-way might be a consideration, requiring property impacts. Truck parking would be impacted if sidewalk replaced the parking area. Bicyclist needs are still not met.

Improvement Option B: Create 10' sidepath

Description: A ten foot sidepath would be built on the north side of Classick Drive from Pine Street to North River Road.

Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. The truck parking could continue to exist on the south side of the street. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $352,000

Key Considerations/Impacts: The sidepath would use space currently used as truck parking so extra right-of-way needs will be minimized. Attention should be paid to avoid interference with utility poles. Bicyclist needs are still not met. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option C: Add street lighting

Description: Install street lighting from Pine Street to North River Road, illuminating all modes

Benefits: This will help all modes to be more visual to each other at night which will improve safety. This will give urban-area type clues to drivers, which will have them more likely to expect bicyclists and pedestrians as well as turning vehicles. This should slow some vehicles that don't realize they are coming into town. This option would improve the pedestrian facilities to very good. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

Preliminary Cost Estimate: $67,000

Key Considerations/Impacts:

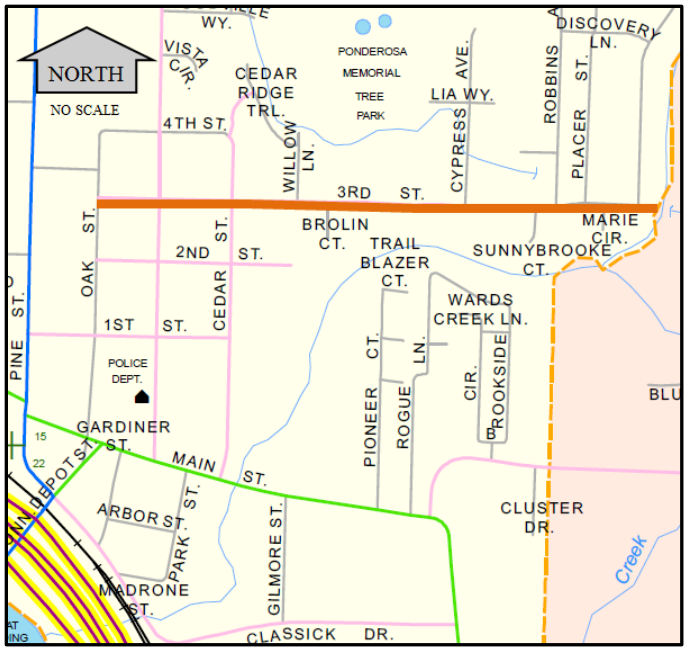
Considerations/Impacts: Utility lines should be investigated. This option may be less relevant if Classick Drive is restricted at the Pine/Depot Street intersection. Bicyclist needs are still not met.

Notes: Classick Drive also involves Project BR2.

P9 3rd Street

Deficiency: There should be sidewalks on both sides of 3rd Street. Striped paths lack a raised curb and any physical or lateral separation from traffic. Garbage carts block the path, rather than in driveways. This section of roadway has a posted speed of 25mph.

Vicinity Map



<u>Improvement Option A:</u> <u>Build six foot sidewalks</u>

Description: Six foot sidewalks would be built for the entire length of 3rd Street. Will also add ADA ramps where needed.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. This will create non-automobile connections across town. The sidewalks will help protect pedestrians from vehicles veering out of their lane. This option would improve the pedestrian facilities to fair.

Preliminary Cost Estimate: $1,547,000

Key Considerations/Impacts: This option will require additional right-of-way, as a current street width will not accommodate this option. In some areas this may also require retaining walls. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies are not improved.

<u>Improvement Option B:</u> <u>Create 10' sidepath</u>

Description: A ten foot sidepath would be built for the entire length of 3rd Street.

Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than Option A. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $384,000

Key Considerations/Impacts: Right-of-way will be a consideration as the current street width will not accommodate this option. In some areas this may also require retaining walls. If a pedestrians origin and destination both exist on the opposite side of the path, then extra crossings will be required. Buffer types and widths need to be considered where the path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option C: Add street lighting

Description: Install street lighting from Cedar Street to Oak Street, illuminating pedestrians, bicyclists, and vehicles turning in and out of driveways.

Benefits: This will help all modes to be more visual to each other at night, improving safety. This option would improve the pedestrian facilities to very good. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

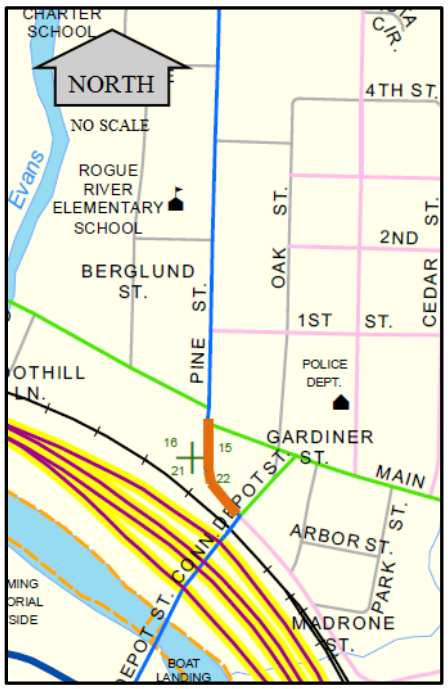
Preliminary Cost Estimate: $24,000

Key Considerations/Impacts: Existing utility poles should be considered for locations.

P10 Pine Street Downtown

Deficiency: There are no sidewalks on the north side of Pine Street from Depot Street to East Main Street and south side for a portion of that distance. This leads up to the intersection of Pine Street and Depot Street that needs crosswalks on the stopped legs, not to include the leg that crosses the railroad tracks. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be 8200.

Vicinity Map



Improvement Option A: Build six foot sidewalks

Description: Six foot sidewalks would be built from Depot Street to East Main Street on both sides of Pine Street.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety with separation from vehicular traffic. This will also define driveway locations for businesses, improving safety. This option would provide needed pedestrian facilities, but would remain at fair.

Preliminary Cost Estimate: $130,000

Key Considerations/Impacts: Right-of-way may be a consideration, requiring property impacts. Bicyclist needs are still not met.

Improvement Option B: Install crosswalks at Pine/Depot Street

Description: Install crosswalk markings for the stopped approaches of Pine/Depot/Classick intersection (north, east and west legs).

Benefits: This should help pedestrians crossing this intersection by marking a crosswalk that is visible to drivers, increasing yielding rate. This option would improve the

pedestrian facilities from fair to good. A crosswalk has a Crash Reduction Factor (CRF) of 0.37.

Preliminary Cost Estimate: $105,000

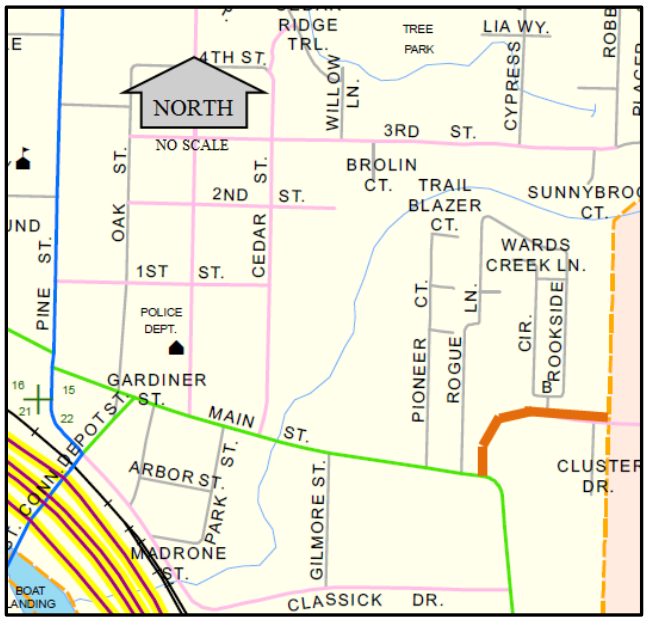
Key Considerations/Impacts: Continental Crosswalks are recommended for installation at mid-block locations. This will not detract from vehicular needs, but make the crossing locations more obvious to drivers. This option will need to be modified for crossing distance or number of stopped approaches if the intersection is modified as in Project OS4.

Notes: Related to Project OS4.

P11 Wards Creek Road

Deficiency: Wider shoulders are an improvement; there needs to be sidewalks around the mall area to the city limits. There should be sidewalks from the mall to the assisted living area and mobile homes. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be 1300.

Vicinity Map



<u>Improvement Option A:</u> <u>Build six foot sidewalks</u>

Description: Six foot sidewalks would be built from East Main Street to the city limits.

Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. This will create non-automobile connections to the new development on the western edge of the city along Wards Creek Road. The sidewalks will help protect pedestrians from vehicles veering out of their lane. This option would improve the pedestrian facilities to fair.

Preliminary Cost Estimate: $439,000

Key Considerations/Impacts: This option will require additional right-of-way, a consideration. The street width that exists will not facilitate this option. With twelve foot travel lanes there will not be any detrimental effects to the vehicular traffic. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies are not improved.

<u>Improvement Option B:</u> <u>Create 10’ sidepath</u>

Description: A ten foot sidepath would be built from East Main Street to the city limits.

Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than Option A. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $96,000

Key Considerations/Impacts: Right-of-way will be a consideration, requiring property impacts. Street width that exists will not facilitate this option. If the origin and destination of the trip both exist on the opposite of the path, then extra crossings will expose pedestrians to vehicle traffic. Buffer types and widths need to be considered where the path crosses private accesses. With twelve foot travel lanes there will not be any detrimental effects to the vehicular traffic. Pedestrians and bicyclists would be safer traveling on a sidepath. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option C: Create buffered paved shoulders

Description: Add a seven foot paved shoulders and a two foot buffer**.**

Benefits: Buffered Paved Shoulders would give a space for bicyclists and pedestrians, unless vehicles park in the shoulder. This option would improve the pedestrian facilities to fair.

Preliminary Cost Estimate: $936,000

Key Considerations/Impacts This option will require additional right-of-way. The shoulder will not have bicycle designations to stop vehicles from parking in them; special no parking signs will be needed for the length of the improvement. Buffer types and widths need to be considered where the path crosses private accesses. Buffered paved shoulders are not exclusive for pedestrians and bicyclists, vehicles can be in that space too.

Notes: Grade should be a consideration. A rest point midway up the hill for wheelchairs and elderly could be considered.

Safe Routes To School (Project P12)

Project P12 was created to cover beyond the Pedestrian or Bicycle sections. As shown in the vicinity map, Safe Routes to Schools (SRTS) area covers generally the entire city.

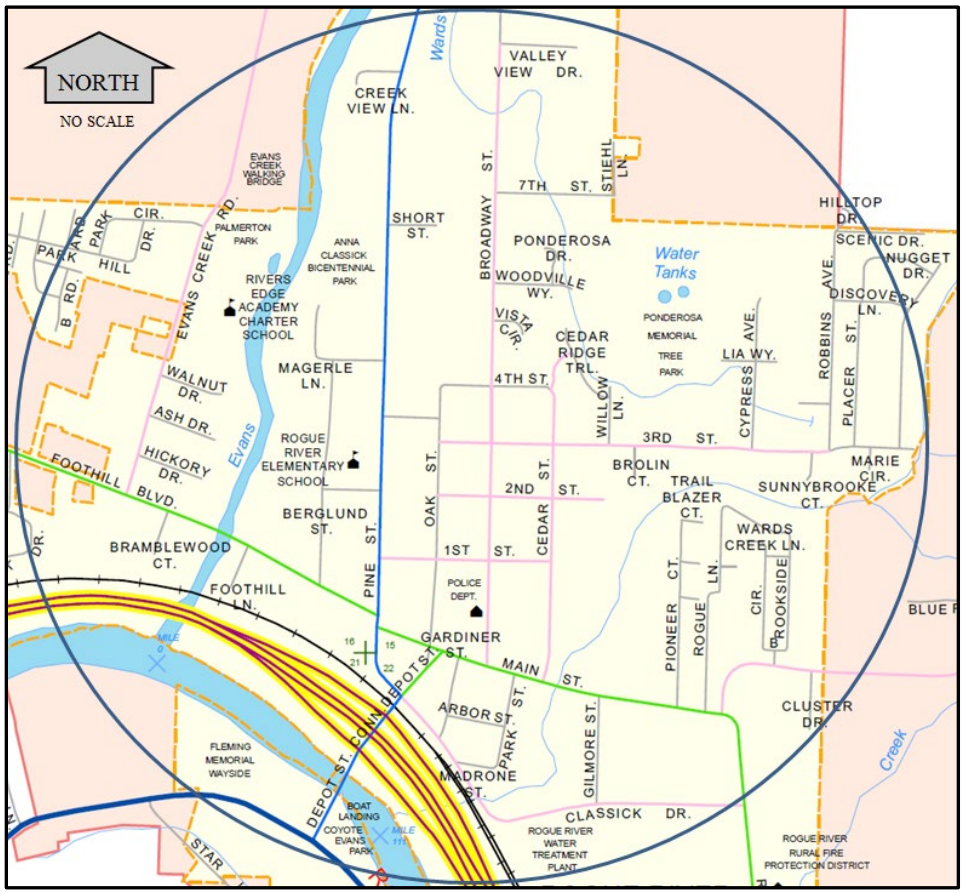
Table 4: Safe Routes to School

Option	Description	Estimate	Agency
Sidewalk			
A	West Evans Creek Rd south of Palmerton	$624,000	SRTS/ City
B	1st St: Broadway to Cedar St	$166,000	
C	2nd St Cedar to Ward Creek	$80,000	
D	Berglund St	$332,000	
E	Oak St	$456,000	
F	Cedar St	$629,000	
G	Robbins Ave	$153,000	
H	Park St	$370,000	
I	Gardiner St	$243,000	
J	4th St off of Berglund St	$173,000	
Advisory Shoulder			
D	Berglund St	$85,000	SRTS/ City
E	Oak St	$118,000	
F	Cedar St	$207,000	
Sidepath			
M	West Evans Crk Rd north of Palmerton	$240,000	SRTS/ City
Buffered Paved Shoulder			
M	West Evans Crk Rd north of Palmerton	$2,340,000	SRTS/ City
Buffered Bicycle lane			
P	Pine St: Depot - E Main St	$417,000	SRTS/ City

P12 Safe Routes to School

Deficiency: Priority should be given to providing sidewalks, or equivalent, within a ½ mile walk to the middle or elementary school, not covered in other projects. Suggestion lists of locations are below each option. Everything inside the circle on the vicinity map is generally within a ½ mile of the elementary school.

Vicinity Map



<u>Improvement Sidewalk Option:</u> <u>Build six foot sidewalks</u>.

Description: The sidewalks would be built as shown below.

Benefits: Sidewalks provide a designated place for pedestrians, improving comfort and safety. This will create non-automobile connections to schools.

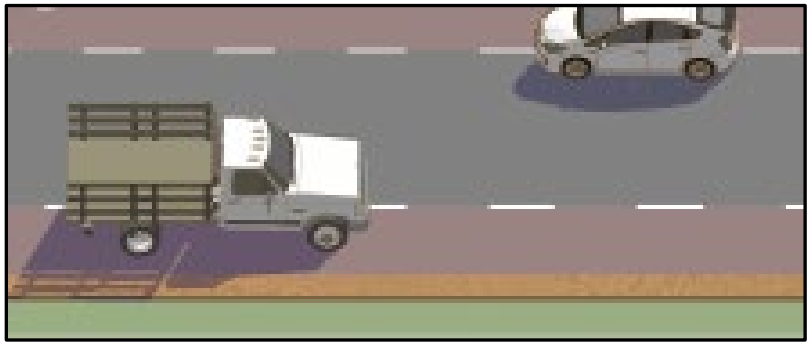
Key Considerations/Impacts: Some of these options may require additional right-of-way. Pedestrians would be safer traveling on a full six foot sidewalk and the protection of a curb. Utility pole locations may be an issue for some options.

Project listing with Preliminary Cost Estimate:

Sidewalk Option	Estimate
a: West Evans Creek Rd south of Palmerton	$624,000
b: 1st St: Broadway to Cedar St	$166,000
c: 2nd St Cedar to Ward Creek	$80,000
d: Berglund St	$332,000
e: Oak St	$456,000
f: Cedar St	$629,000
g: Robbins Ave	$153,000
h: Park St	$370,000
i: Gardiner St	$243,000
j: 4th St off of Berglund St	$173,000

Improvement Advisory Shoulder Option: Create Advisory Shoulders

Description: Turn a two lane roadway into a one lane with six foot Advisory Shoulders**.**



Benefits: Advisory Shoulders would give a space for bicyclists and pedestrians, until two vehicles meet. This option would require less right–of-way than most options.

Identified Project & Preliminary Cost Estimate:

Advisory Shoulder Option	Estimate
d: Berglund St	$85,000
e: Oak St	$118,000
f: Cedar St	$207,000

Key Considerations/Impacts: This option will not require additional right-of-way, a consideration. The street will only serve one vehicle direction at a time as there is only one lane. When two vehicles meet they will pull into the pedestrian and bicycle space as shown. Advisory Shoulders are not exclusive for pedestrians and bicyclists, vehicles can be in that space too. If a school bus has to pull over into the advisory shoulder it must wait for a space vacant of pedestrians and bicyclists as they have priority. An approved "Request for Experiment" is required from FHWA before installation of this option. The advisory shoulder can be pigmented to a different color to better separate the advisory shoulders from the single travel lane. Parking is not allowed in the advisory shoulders, at all times.

Improvement Sidepath Option: Create 10' sidepath

Description: A ten foot sidepath would be built on West Evans Road north through Palmerton Park**.**

Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than other options.

Preliminary Cost Estimate: $240,000

Key Considerations/Impacts: This option will require additional right-of-way, a consideration. The street widths that exist will likely not facilitate this improvement. Buffer types and widths need to be considered where the path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Sidepaths save expenses in the form of ADA ramps, curb, and the combination of sidewalks and bicycle lanes.

Improvement Buffered Paved Shoulder Option: Create Buffered Paved Shoulders

Description: Add a seven foot paved shoulders and a two foot buffer to West Evans Creek Road north through Palmerton Park**.**

Benefits: Buffered Paved Shoulders would give a space for bicyclists and pedestrians, unless vehicles park in the shoulder.

Preliminary Cost Estimate: $2,340,000

Key Considerations/Impacts: This option will require additional right-of-way. The shoulder will not have bicycle designations to stop vehicles from parking in them; special no parking signs will be needed for the length of the improvement. Buffer types and widths need to be considered where the path crosses private accesses. Buffered Paved Shoulders are not exclusive for pedestrians and bicyclists, vehicles can be in that space too.

Improvement Bicycle Lane Option: Create bicycle lanes

Description: Add a six foot paved lane and a two foot buffer to Pine Street from Depot Street to East Main Street.

Benefits: Bicycle lanes would give a space for bicyclists, not allowing vehicles to park in the designated lanes

Preliminary Cost Estimate: $408,000

Key Considerations/Impacts: This option will require additional right-of-way, a consideration. The shoulder will not have bicycle designations to stop vehicles from parking in them.

Notes: Bicycle lanes will need to be built when sidewalks are provided. Sidepaths do provide for both modes: pedestrians and bicyclists.

Bicycle

Similar to pedestrian alternatives, a variety of options offer a mix of vehicle separation widths from a standard bike lane to a separated sidepath. Table 5 shows bicycle alternatives and options.

Table 5: Bicycle Alternatives & Options

Option	Description	2040 LTS	Estimate	Agency
B1 Pine St, E Main St - City Limits				
A	5' bike lane	LTS 2	$5,000	City
B	6' bike lane	LTS 2	$35,000	
C	10' sidepath	LTS 1	$48,000	
B2 East Evans Creek Rd, City Limits - high school				
A	6' bike lane	LTS 3	$465,000	County
B	8’ buffered bike lane	LTS 3	$2,913,000	
C	10' sidepath	LTS 1	$782,000	
B3 West Main St/Foothills Blvd, Pine St - City Limits				
A	6' bike lane	LTS 3	$1,646,000	City
B	8’ buffered bike lane	LTS 2	$2,094,000	
C	8' sidepath	LTS 1	$385,000	
B4 East Main St, Pine St – N River Rd				
A	6' bike lane	LTS 2	$24,000	City
B	Sharrow markings	LTS 4	$5,000	
B5 Broadway Street North, 1st St – end of street				
A	6' bike lane	LTS 2	$35,000	City
B	8’ buffered bike lane	LTS 2	$95,000	
B6 Broadway Street South, E Main St - 1st St				
A	6' lane	LTS 2	$7,000	City
B	8’ buffered bike lane	LTS 2	$18,000	
B7 North River Road, E Main St - City Limits				
A	6' bike lane	LTS 3	$3,453,000	City
B	8’ buffered bike lane	LTS 3	$4,903,000	
B8 3rd Street, Pine St – City Limits				
A	6' bike lane	LTS 2	$1,441,000	City
B	8’ buffered bike lane	LTS 2	$2,629,000	
C	10' sidepath	LTS 1	$528,000	
D	Sharrow markings	LTS 3	$121,000	
B9 OR99, City Limits - City Limits				
A	10’ Sidepath	LTS 1	$720,000	ODOT
B	8’ buffered bike lane	LTS 4	$6,263,000	

B1 Pine Street

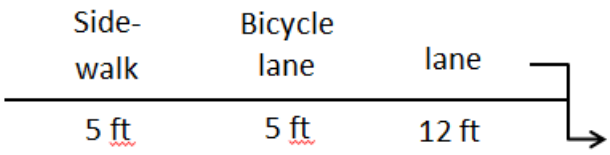
Deficiency: There are no bicycle lanes on Pine Street, from Main Street to East Evans Creek Road. Pine Street has paved shoulders running along both sides of Pine Street, beyond the elementary school and into suburban area until it turns into East Evans Creek Road. This section of roadway has a posted speed of 25mph, with the exception of the school zone. The 2040 ADT for this street is projected to be 2500. While LTS 2 is sufficient for most users, LTS 1 is preferred for sections at least within a half-mile of an elementary or middle school.

Vicinity Map

Improvement Option A: Convert paved shoulders to bicycle lanes.

Description: The five foot shoulders on Pine Street will be converted into five foot bicycle lanes, from Main Street to East Evans Creek Road. Bicycle lane markings need to be added to convert the shoulder into a bicycle lane.

Roadway Cross-section



Benefits: Conversion to a bicycle lane will create a dedicated space to improve stress, level of comfort, and safety of bicyclists of all ages. The LTS of this option remains at LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

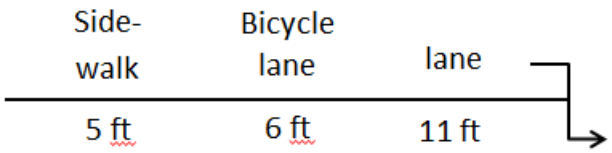
Preliminary Cost Estimate: $5,000

Key Considerations/Impacts: This option will prohibit parking along Pine Street. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. A five foot bicycle lane is not desirable on the street of an elementary school. Impacts to pedestrians are unchanged as the buffering width between the sidewalk and travel lane remains the same for the sections where the sidewalk exists south of Creek View Lane.

Improvement Option B: Create full six foot bicycle lanes.

Description: On Pine Street, six foot bicycle lanes will be built from Main Street to East Evans Creek Road. The vehicle travel lanes will be narrowed by a foot and bicycle lanes will widen by a foot.

Roadway Cross-section



Benefits: Wider sections are needed to improve stress, level of comfort, and safety of bicyclists of all ages. The LTS of this option remains at LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $35,000

Key Considerations/Impacts: This option will prohibit parking on Pine Street. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. A six foot bicycle lane is desirable on the street an elementary school is located. A six foot bicycle lane increases the buffering width slightly for pedestrians by providing a one foot larger space between pedestrians and vehicles.

Improvement Option C: Add a sidepath

Description: Add a 10' sidepath from East Main Street to East Evans Creek Road

Roadway Cross-section

Sidepath	Buffer landscape	Possible parking	Lane	Lane	Shoulder
10 ft	0-3 ft	10 ft	11 ft	11 ft	3 ft

Benefits: A sidepath offers a separate facility from the roadway for both pedestrians and bicyclists. This improves the overall safety and level of comfort. A sidepath is safer for users by providing a buffered landscape strip between vehicles. This improves the LTS rating from LTS 2 to LTS 1 and is the only option to reduce the stress rating.

Preliminary Cost Estimate: $48,000

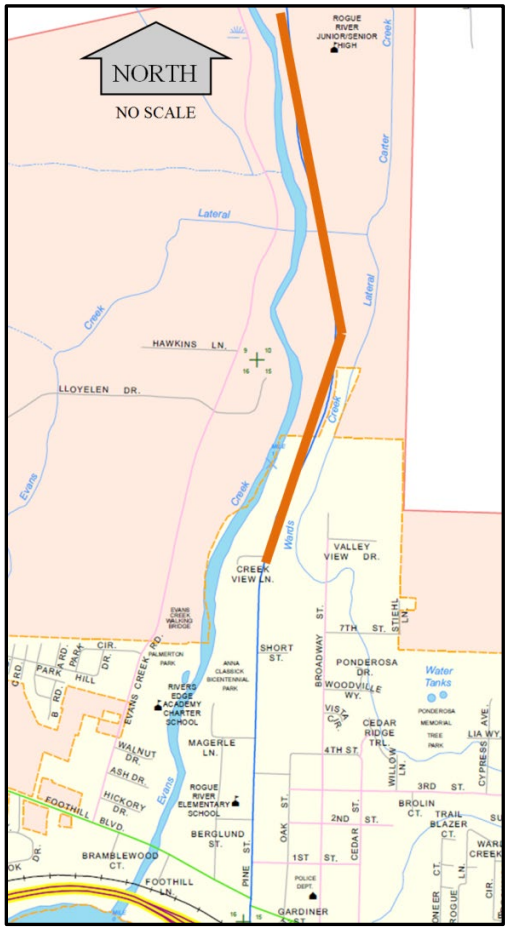
Key Considerations/Impacts: The expanded right-of-way needs will be a large consideration. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Notes: Option C is the only one that improves LTS rating.

B2 East Evans Creek Road

Deficiency: The paved shoulder on East Evans Creek Road and past the middle school and high school is only about four feet wide in most places. While potentially inviting, it is functionally too narrow for safe bicycle riding and has a LTS 4 rating as a result. This section of roadway has a posted speed of 45mph. In regard to a middle school being on the street, an LTS 1 rating is preferred.

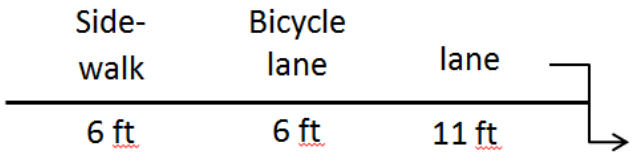
Vicinity Map



<u>Improvement Option A:</u> <u>Add six foot bicycle lanes</u>

Description: Restripe the roadway with ten foot travel lanes and six foot bicycle lanes. The bicycle lanes would be widened to six feet, considering the middle school on this roadway. The travel lanes are reduced to eleven feet wide.

Roadway Cross Section



Benefits: This will increase the shoulder area from four feet to six feet which will be designated as bicycle lanes. This will provide a designated space for bicyclists. This improves the LTS rating from 4 to 3. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

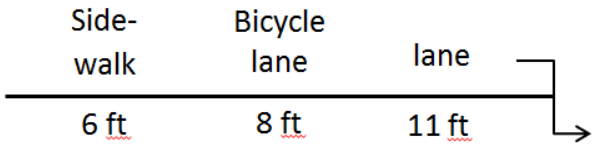
Preliminary Cost Estimate: $465,000

Key Considerations/Impacts: Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation.

Improvement Option B: Add eight foot buffered bicycle lanes

Description: Widen the roadway with buffered eight-foot bicycle lanes. The bicycle lanes would be six feet wide with a two foot buffering space.

Roadway Cross Section



Benefits: This will create a more comfortable experience over the standard bicycle lanes in Option A. The buffer will give additional separation between bicyclists and vehicles. This extra space will be necessary especially for any middle school students bicycling to/from school. This increased width gives a safer space where traffic speeds increase. This improves the LTS rating from LTS 4 to LTS 3. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

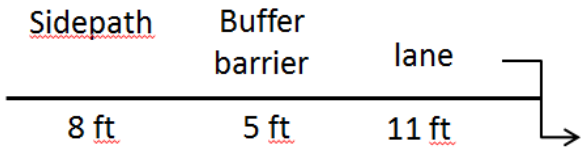
Preliminary Cost Estimate: $2,913,000

Key Considerations/Impacts: The extra right-of-way required for this option will be a large consideration. In some areas retaining walls may be required, especially on the west side of the roadway. There is potential for utility conflicts such as the overhead power lines. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation.

Improvement Option C: Add a 10' sidepath

Description: The shoulder will be widened on the east side for an eight foot sidepath to serve bicyclists and pedestrians. A barrier (such as a guard rail) and two feet shy distance will be placed between the sidepath and the roadway.

Roadway Cross Section



Benefits: This will create a separated more comfortable space than the other two options with the maximum stress reduction. A separated space will allow maximized use of the facility for students and other bicyclists and pedestrians and provide a much safer space. The elevation of the sidepath can be investigated as to its placement at roadway height or above/below. The separation in elevation itself may add protection to bicyclists and pedestrians. This significantly improves the LTS rating from LTS 4 to LTS 1. This increases the width the greatest and gives the safest space where traffic speeds increase.

Preliminary Cost Estimate: $782,000

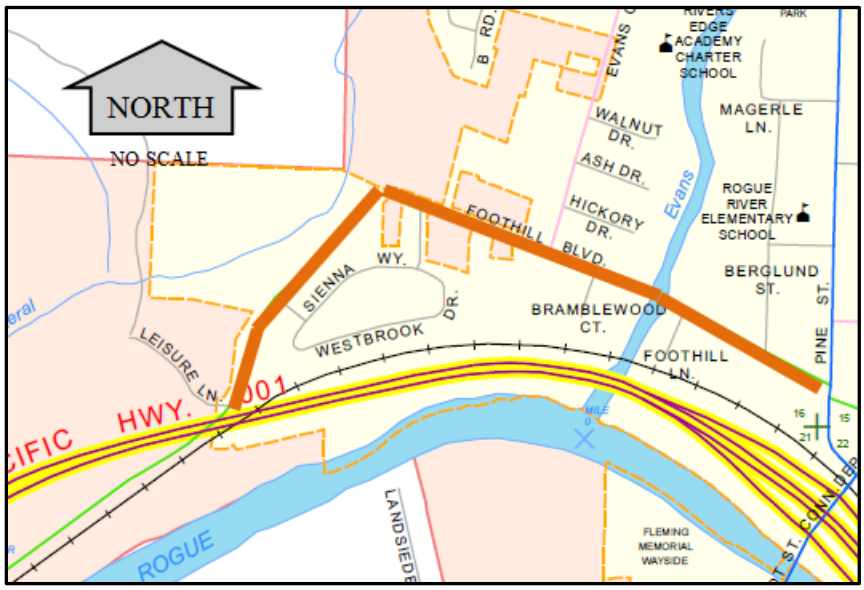
Key Considerations/Impacts: The extra right-of-way required will be a large consideration to add a path and necessary barriers, but potentially less than required in Option B. The path will cross private driveways, so barrier/buffer types and placement must be considered to avoid sight distance issues. The eight foot path is a minimum width for two bicyclists passing each other, so the path could be wider in certain locations. The east side is chosen as it will not interfere with utility poles and will have fewer slope issues. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Notes: Same area as Project P3. Option C covers both bicyclists and pedestrians, so a separate sidepath option under P3 is not necessary. Sidewalk does not currently exist that is shown on the roadway cross sections.

B3 West Main Street/Foothill Boulevard

Deficiency: West Main Street has paved shoulders that could be used as bicycle facilities, although it is too narrow. In some locations east of West Evans Creek Road, there is no sidewalk and a section of the pavement is striped to substitute for a combination walking path/possible bike lane. This section of roadway has a posted speed of 25 to 45mph. The 2040 ADT for this street is projected to be 1700. The road cross section and shoulder space narrows on Foothills Boulevard, west of West Evans Creek Road as it approaches the Urban Growth Boundary.

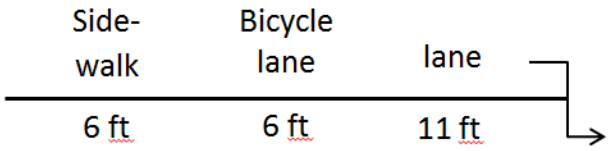
Vicinity Map



<u>Improvement Option A:</u> <u>Add six foot bicycle lanes</u>

Description: The paved shoulders would be widened and converted to six foot bicycle lanes from Pine Street to the new development on Westbrook Drive.

Roadway Cross-section



Benefits: Bicycle lanes will give a designated space, increasing use and comfort. The LTS remains at LTS 3. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $1,646,000

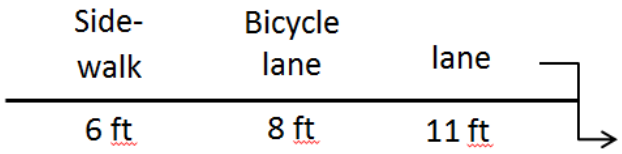
Key Considerations/Impacts: The expanded right-of-way will be a large consideration with property impacts. Street width that exists will not facilitate this option. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Bicyclists would be much safer traveling in a full six foot travel lane.

Pedestrian deficiencies are not addressed, so a separate pedestrian sidewalk project will be required.

Improvement Option B: Add eight foot buffered bicycle lanes

Description: The paved shoulders would be widened and converted to eight foot buffered bicycle lanes from Pine Street to the new development on Westbrook Drive. The bicycle lanes would be six feet with a two foot buffer.

Roadway Cross-section



Benefits: This will give an improved more comfortable semi-separated bicycle space than in Option A. This increased width gives a safer space where traffic speeds increase. This option should see more use than a standard bicycle lane shown in Option A. The LTS remains at LTS 2. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

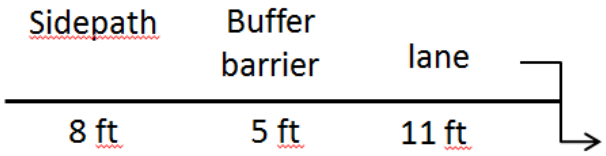
Preliminary Cost Estimate: $2,094,000

Key Considerations/Impacts: The expanded right-of-way will be a large consideration, requiring property impacts to a greater degree than in Option A. Street width that exists will not facilitate this option. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian deficiencies are not addressed, so a separate pedestrian sidewalk project will be required.

Improvement Option C: Add a 10' sidepath

Description: The shoulder will be widened on one side for an eight foot sidepath to serve bicyclists and pedestrians. A barrier (such as a guard rail) and two feet shy distance will be placed between the sidepath and the roadway.

Roadway Cross Section



Benefits: This will create a separated more comfortable space than the other two options with the maximum stress reduction. A separated space will allow maximized use of the facility for bicyclists and pedestrians and provide a much safer space. This significantly improves the LTS rating from LTS 3 to LTS 1. This gives the safest space where traffic speeds increase.

Preliminary Cost Estimate: $385,000

Key Considerations/Impacts: The extra right-of-way required will be a large consideration to add a path and necessary barriers, but potentially less than required in Option B. The path will cross private driveways, so barrier/buffer types and placement must be considered to avoid sight distance issues. The eight foot path is a minimum width for two bicyclists passing each other, so the path could be wider in certain locations. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Notes: Compatible with P1 Option A. Option A & B are supplanted by P1 Option B (sidepath). Sidewalk does not currently exist that is shown on the roadway cross sections.

B4 East Main Street

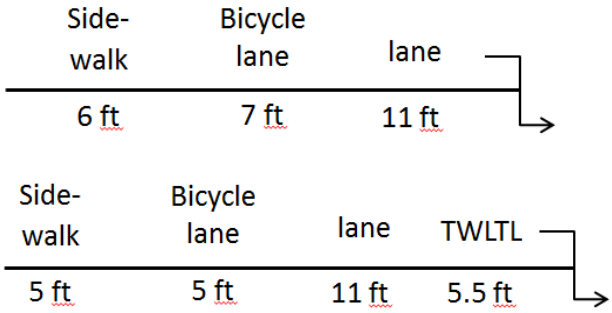
Deficiency: East Main Street needs to create bicycle lanes or show shared path markings for vehicles and bicycles from Ward Creek west to Pine Street. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be 9800. East Main Street east of Ward Creek to North River Road has a wider shoulder on the north side to Wards Creek Road that could be converted into a four to six foot bicycle lane.

Vicinity Map

Improvement Option A: Create six foot bicycle lanes

Description: The existing parking would be converted into six foot bicycle lanes.

Roadway Cross-section (west and east of bridge)



Benefits: Designated bicycle lanes would improve bicyclist safety and comfort. This creates an LTS rating of 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $24,000

Key Considerations/Impacts: On-street parking is lost. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

Improvement Option B: Shared Lane Markings (Sharrows)

Description: Signs and symbols on the pavement are needed showing the travel lanes are shared with bicyclists. The roadway cross sections stay the same.

Benefits: This should help drivers recognize and expect bicyclists traveling on this street. The LTS remains at LTS 4, still uncomfortable for a majority of users.. This is the most effective solution at the Ward Creek Bridge if it is not modified or replaced. Option A could be selected for the section east of the bridge.

Preliminary Cost Estimate: $5,000

Key Considerations/Impacts: On-street parking is not lost. Vehicles and bicyclists will be sharing the travel lanes. Vehicles may be impacted as a bicycle will likely be traveling at a slower speed. Shared lanes are not as comfortable for bicyclists as standard bike lanes shown in Option A because of potential "dooring" affects from parked vehicles or from closely following vehicles. Pedestrian sidewalks are not affected.

B5 Broadway Street North

Deficiency: Broadway Street north of 1st Street needs to have bicycle lanes. This section of roadway has a posted speed of 25mph.

Vicinity Map

Improvement Option A: Create six foot bicycle lanes.

Description: Six foot bicycle lanes would be striped from 1st Street to the end of Broadway Street.

Roadway Cross-Section

Side-walk	Diagonal Parking	Bicycle lane	Lane	Lane	Bicycle lane	Diagonal parking	Side-walk
5 ft	13 ft	6 ft	11 ft	11 ft	6 ft	13 ft	5 ft

Benefits: A designated bicycle lane would improve safety and comfort for bicyclists. The LTS rating remains at LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $35,000

Key Considerations/Impacts: Diagonal parking could be preserved (at 13 foot width) as the paved street surface is wide enough for 11' travel lanes and six foot bicycle lanes. Broadway Street's width narrows to the north. There may be interference/safety impacts between backing vehicles and bicyclists as visibility is restricted. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

Improvement Option B: Create nine foot buffered bicycle lanes

Description: six foot bicycle lanes with three feet of buffering, for a total of nine feet, would be striped from 1st Street to the end of Broadway Street. There would be six foot bicycle lanes and three foot buffers.

Roadway Cross-Section

Side-walk	Parallel Parking	Bicycle lane	Lane	Lane	Bicycle lane	Parallel parking	Side-walk
5 ft	10 ft	9 ft	11 ft	11 ft	9 ft	10 ft	5 ft

Benefits: A buffered bicycle lane would give extra separation between bicyclists and vehicles which will improve safety, maximize use of the facility, and improve comfort over Option A. The LTS rating remains at LTS 2. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

Preliminary Cost Estimate: $95,000

Key Considerations/Impacts: Diagonal parking would be converted into parallel parking to accommodate the buffer spaces. Parallel parking would trade off backing issues with bicyclists with potential "dooring" impacts. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

B6 Broadway Street South

Deficiency: Broadway Street south of 1st Street to Main Street needs to have bicycle lanes on both sides of the street and is a LTS 3 section. This section of roadway has a posted speed of 25mph. The 2040 ADT for this street is projected to be 3000.

Vicinity Map

Improvement Option A: Create six foot bicycle lanes

Description: Six foot bicycle lanes would be striped from 1st Street to East Main Street.

Roadway Cross-section

Side-walk	Diagonal Parking	Bicycle lane	Lane	Lane	Diagonal parking	Bicycle lane	Side-walk
5 ft	13 ft	6 ft	11 ft	11 ft	13 ft	6 ft	5 ft

Benefits: A designated bicycle lane would improve safety and comfort for bicyclists. The LTS ranking improves from LTS 3 to LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $7,000

Key Considerations/Impacts: Diagonal parking could be preserved (at 13 foot width) as the paved street surface is wide enough for 11' travel lanes and six foot bicycle lanes. There may be interference/safety impacts between backing vehicles and bicyclists as visibility is restricted. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation.

Improvement Option B: Create nine foot buffered bicycle lanes

Description: Nine foot buffered bicycle lanes would be striped from 1st Street to East Main Street. There would be six foot bicycle lanes and three foot buffers.

Roadway Cross-section

Side-walk	Parallel Parking	Bicycle lane	Lane	Lane	Diagonal parking	Bicycle lane	Side-walk
5 ft	10 ft	9 ft	11 ft	11 ft	10 ft	9 ft	5 ft

Benefits: A buffered bicycle lane would give extra separation between bicyclists and vehicles which will improve safety, maximize use of the facility, and improve comfort over Option A. The LTS ranking improves from LTS 3 to LTS 2. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

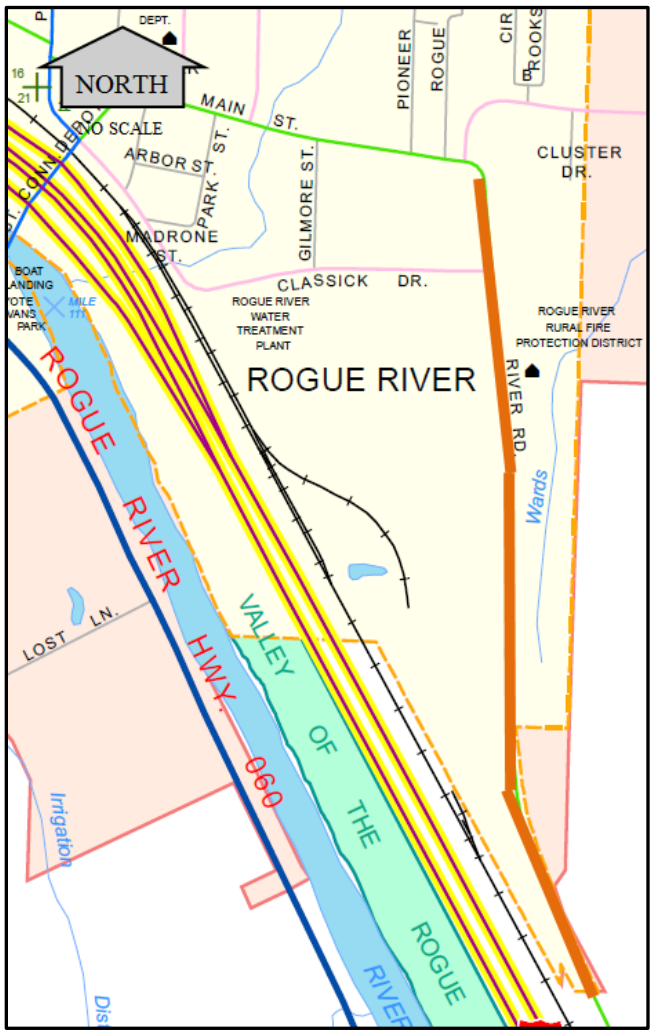
Preliminary Cost Estimate: $18,000

Key Considerations/Impacts: Diagonal parking would be converted into parallel parking to accommodate the buffer spaces. This will decrease the number of parking spaces. Parallel parking would trade off backing issues with bicyclists with potential "dooring" impacts. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

B7 North River Road

Deficiency: North River Road from East Main Street and south of Classick Drive could use bicycle lanes given the auto speed limit in this LTS 3 section instead of a wider paved shoulder that allows for unnecessary parking. This section of roadway has a posted speed of 25-45mph. The 2040 ADT for this street is projected to be 3500, and 3100 south of Classick Drive. It would be good to work with the county to connect the Mountain of the Rogue Mountain Bike trail and invite those that use this recreational facility to come into town on a bicycle.

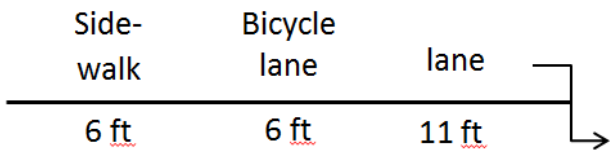
Vicinity Map



Improvement Option A: Convert or create paved shoulders to bicycle lanes

Description: The paved shoulders would be converted and designated as six foot bicycle lanes from East Main south to the urban growth boundary/city limits. Where there are not shoulders the bicycle lanes will be created.

Roadway Cross-section



Benefits: A designated bicycle lane will improve the safety and comfort of bicyclists. The LTS rating remains LTS 3. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

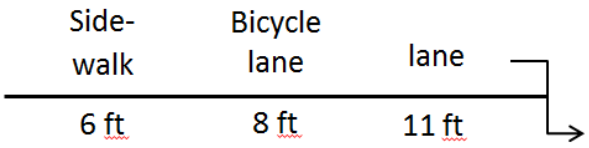
Preliminary Cost Estimate: $3,453,000

Key Considerations/Impacts: Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks, or lack thereof, are not affected.

Improvement Option B: Create eight foot buffered bicycle lanes

Description: The paved shoulders would be converted to buffered bicycle lanes from East Main to the UGB/city limits. Buffered bicycle lanes should be built where shoulders do not suffice. This would be a combination of a six foot bicycle lane with a two foot buffer.

Roadway Cross-section



Benefits: A buffered bike lane would further improve safety and comfort over Option A by increasing the separation from vehicles. This is especially important because of the higher speed traffic on this road segment. The LTS rating remains at LTS 3. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

Preliminary Cost Estimate: $4,903,000

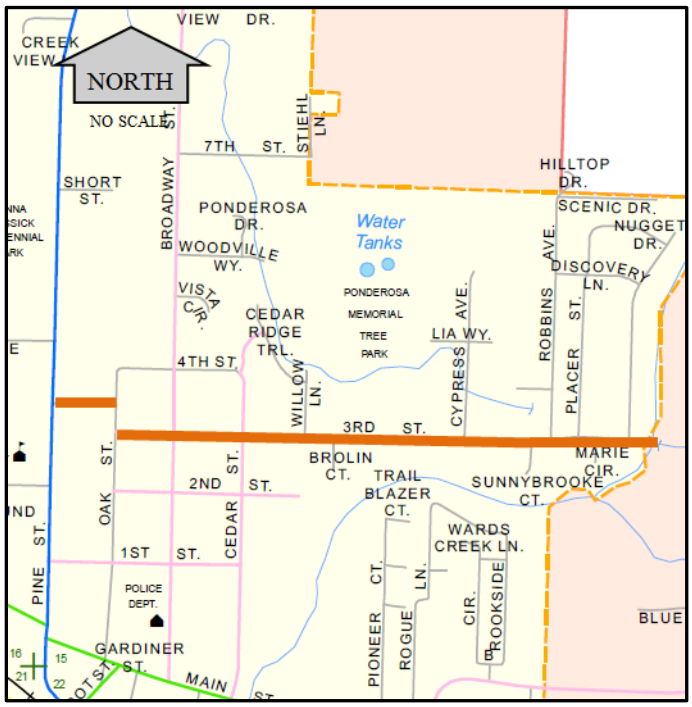
Key Considerations/Impacts: The major impact would be no street parking allowed on this segment, however, most of the uses have off-street parking locations which will minimize the loss. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks, or lack thereof, are not affected.

Notes: The UGB/city limits are 2000 feet north of the entrance to the Mountain of the Rogue trailhead, so there will be a facility gap unless Jackson County fills this in. Sidewalk does not currently exist that is shown on the roadway cross sections.

B8 3rd Street

Deficiency: 3rd Street is missing necessary bicycle facilities given the collector-level classification. This section of roadway has a posted speed of 25mph.

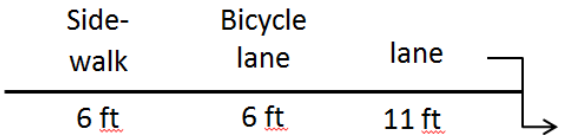
Vicinity Map



Improvement Option A: Add bicycle lanes

Description: Six foot designated bicycle lanes would be added to 3rd Street.

Roadway Cross-section



Benefits: Bicycle lanes would improve the overall safety and comfort for bicyclists by giving them a designated space to travel in. This improves the LTS ranking to LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

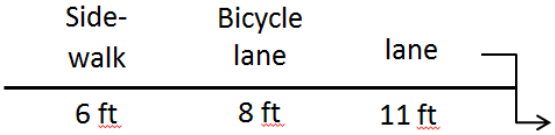
Preliminary Cost Estimate: $1,441,000

Key Considerations/Impacts: The expanded street width will be a consideration, possibly requiring property impacts as the existing pavement width varies from 30-35 feet. Any on-street parking on the east end of 3rd Street would be eliminated with this option. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian deficiencies are not affected, but the "striped path" space is converted to bike lanes, so a pedestrian improvement will be needed.

Improvement Option B: Add eight foot buffered bicycle lanes

Description: Six foot bicycle lanes with two foot buffers would be added to all of 3rd Street.

Roadway Cross-section



Benefits: Buffered bicycle lanes would increase the comfort of bicyclists by increasing separation from vehicles over a standard bicycle lane in Option A. This improves the LTS ranking to LTS 2. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

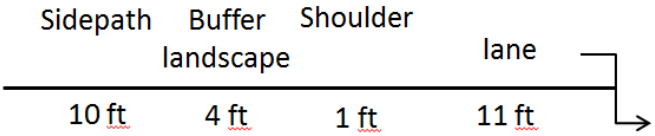
Preliminary Cost Estimate: $2,629,000

Key Considerations/Impacts: The expanded right-of-way will be a large consideration, requiring property impacts greater than in Option A. The cost will also be greater than option A. Any on-street parking on the east end of 3rd Street would be eliminated with this option. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian deficiencies are not improved; the "striped path" space is converted to bike lanes, so a pedestrian improvement will be needed.

Improvement Option C: Create a 10' sidepath

Description: Add a ten foot sidepath should be built on one side of 3rd Street.

Roadway Cross-section



Benefits: There are no restriping costs, the lane lines stay as they exist now. A sidepath would provide a separated space from the roadway for both bicycles and pedestrians. This will provide the maximum comfort and use of the facility. This improves the LTS ranking to LTS 1.

Preliminary Cost Estimate: $528,000

Key Considerations/Impacts: The expanded right-of-way will be a consideration, potentially requiring property impacts. The sidepath may have will benefit bicyclist and pedestrians both. No extra pedestrian project is necessary on 3rd as this option provides for both the bicycle and pedestrian modes. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option D: Shared Lanes Markings (Sharrows)

Description: Add shared lane markings to 3rd Street. There is no change in roadway cross-section.

Benefits: Shared-lane markings should help drivers look out for and expect bicyclists traveling on the street. This creates an LTS 3 ranking.

Preliminary Cost Estimate: $121,000

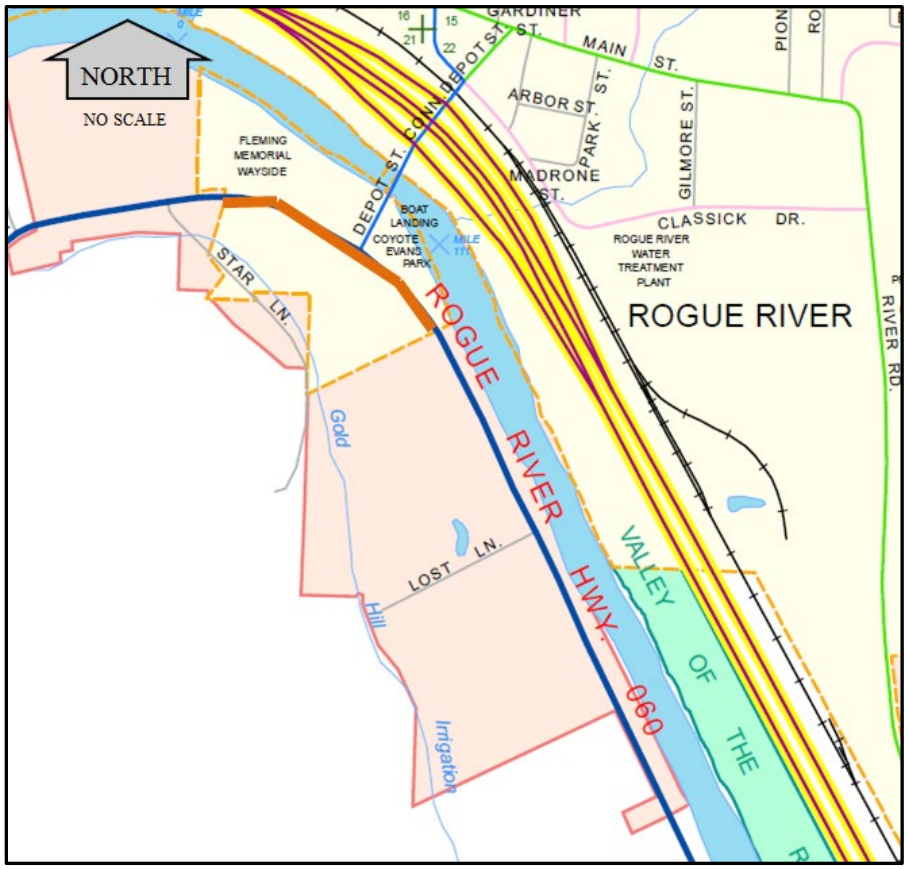
Key Considerations/Impacts: Additional street lighting is strongly advised with this option with the mixed traffic conditions. Vehicles will need to watch for bicyclists and slow to the speed they are traveling. Bicyclists will be put in greater danger and stress traveling with motorized vehicles, even up the hills. This will impair vehicular movements. Pedestrian deficiencies are not affected other than the "striped path" sections can be used for pedestrians only.

Notes: Slopes create some sections that are so narrow that any option will require property acquisition and construction. Option A and B will require additional pedestrian projects to be done concurrently, see Project P9. Sidewalk does not currently exist that is shown on the roadway cross sections.

B9 OR99

Deficiency: With the high volume of vehicles using OR99, there should be improved bicycle facilities. The bicyclists need to feel safe in this public environment. This should be on both sides of OR99 within the Urban Growth Boundary of Rogue River. There is basically just shoulders on this high speed, high volume facility. This section of roadway has a posted speed of 30mph, but goes up outside the city limits. The 2040 ADT for this street is projected to be 8300 north of Depot Street and 4200 to the south.

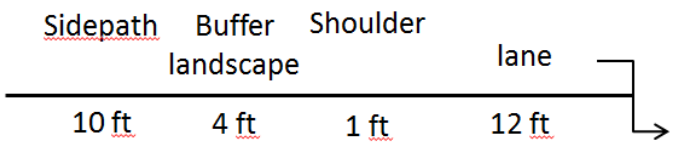
Vicinity Map



<u>Improvement Option A:</u> <u>Create a 10' sidepath</u>

Description: A 10' sidepath would be built on one side of OR99 within the Rogue River UGB. Buffer space could vary depending upon available ROW.

Roadway Cross-section



Benefits: A sidepath would create a separate space from vehicles for both bicyclists and pedestrians. This will maximize safety, comfort and use of the facility. This also works

well with a proposed Rogue River Greenway path route along OR99. This improves the LTS rating to an LTS 1.

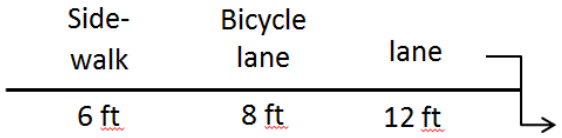
Preliminary Cost Estimate: $720,000

Key Considerations/Impacts: There may be environmental issues to address. Improvement would be on one side of OR99, likely the river side due to property, utility poles, and ROW considerations. The expanded roadway corridor may require additional property impacts. Within the urban portions of Rogue River where the path crosses private accesses additional considerations for sight distance and visibility to path users need to be taken into account. Pedestrians would be much safer traveling in a sidepath. Design consideration should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps).

Improvement Option B: Create eight foot buffered bicycle lanes

Description: Six foot bicycle lanes with two foot buffers would be added on both sides of OR99 within the Rogue River UGB.

Roadway Cross-section



Benefits: Buffered bike lanes would give increased comfort over a standard bike lane or the existing paved shoulders by providing additional buffering space between bicyclists and vehicles. If the shoulders are widened outside the UGB on OR99, then the shoulders will transition well into this buffered bicycle lane (where OR99 is in the city limits). This creates an LTS 4 rating. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

Preliminary Cost Estimate: $6,263,000

Key Considerations/Impacts: Buffered bike lanes will not provide as much separation in Option A which could deter users. This facility will be closer to high speed vehicles, but have fewer ROW and environmental issues. The expanded width may require property impacts. Pedestrian deficiencies are not affected. Sidewalk does not currently exist that is shown on the roadway cross sections.

Transit

The transit alternatives in Table 6 address the long-term needs of Rogue River and the existing Rogue Valley Commuter service provided by Josephine County Transit (JCT).

Table 6: Transit Alternatives & Options

Option	Description	Rating	Estimate	Agency
T1 Infrequent Transit				
A	On-demand service	Good	$179,000	City
B	Fixed route circulator	Fair	$418,000	
T2 Stop placement				
A	Ray's Food Place	Fair	$23,000	JCT
B	Umpqua Bank	Fair	$23,000	
C	Current location	Good	$0	

T1 Infrequent Transit

Deficiency: An internal city public transit circulator or dial –a-ride on demand service is needed. One hub could be the stop for the Rogue Valley Commuter line between Grants Pass and Medford. There is a lack of service for those without a personal vehicle across all ages and demographics.

Improvement Option A: On-demand service

Description: Add an on-demand "dial-a-ride" service that is not restricted to any age group, user class, or trip priority. A person arranges a pickup and a destination over the phone. Rates are less than a taxi and usually a short (shuttle-type) bus.

Benefits: There is no fixed route and is not focused on older citizens. On-demand service, in contrast to a fixed route, may reduce the "last mile" distance to/from transit at the origin and destination. This reduces expenditures when demand or ridership does not exist. This is a good initial start to bus service and helps identify potential users and destinations when a city transit service is in place. This option would improve transit services to good.

Preliminary Cost Estimate: $179,000 per year

Key Considerations/Impacts: On-demand service requires use of dispatch services to coordinate and schedule the rides. Specialized software/phone applications can minimize dispatch costs and waiting time. This bus must be equipped to handle at least two mobility devices if state or federal funds are used to purchase the vehicle. This bus should also have a bicycle rack to accommodate bicyclists. This service should be less expensive for operation and maintenance than Option B.

Improvement Option B: A fixed circulating bus route

Description: Add a fixed circulating bus route through the city serving most major destinations and within reasonable walking distance of most residential areas. Stops could be fixed or on a pick-up/drop off anywhere type basis along the route. Equipment can vary from smaller van-based shuttle buses to larger vehicles.

Benefits: Fixed services offer repeatability and dependability of service and do not require reservations as with on-demand service. Frequency could change depending on demand. This could also serve as the basis for creating other routes as demand increases. This option would improve transit services to fair.

Preliminary Cost Estimate: $418,000 per year

Key Considerations/Impacts: Items to be determined: stops, routes, frequency, schedule, drivers, start time, last route time, and storage of bus. This bus must be equipped to handle at least two mobility devices if state or federal funds are used to purchase the vehicle. This bus should also have a bicycle rack to accommodate bicyclists. The Americans with Disabilities Act (ADA) requires that fixed route transit also must have a complimentary paratransit service. This paratransit service must start when the service begins and cover the same service hours and days as the fixed route service. A full-fledged bus route will be significantly more expensive than Option A to operate or to maintain.

Notes: Estimates based on weekday service with 12 hours a day. On-demand service required to use the same service hours/days as fixed route.

T2 Stop placement

Deficiency: The Rogue Valley Commuter line is already noting the I-5 interchange congestion and would prefer a stop closer to the ramps. Alternatives should be considered where the commuter bus can stop but does not have to exit Rogue River using the Depot Street interchange.

Driving from the exit to the south before the Depot Street exit on I5 is four minutes to the Depot Street exit. To take the exit before that and avoid the congestion of the Depot Street exit is eight minutes driving up N River Road. If traffic seems to make a four minute difference then it would make sense for the Rogue Valley Commuter bus to use the exit to the south. There will still be a railroad crossing on Twin Bridge Road.

Driving from the community center and through the Depot Street exit on I5 is eight minutes to the Grants Pass exit. It does not seem advisable to travel on Foothills Drive to avoid the Depot Street interchange.

Improvement Option A: Change stop location to Ray's Food Place

Vicinity Map

Description: The Rogue Valley Commuter Line stop would be moved to Rays' Food Place located at 506 East Main Street .

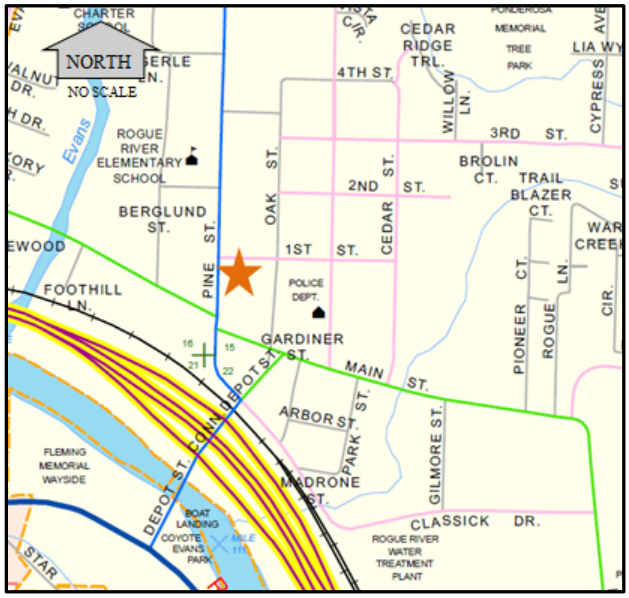
Benefits: This should serve the community well as it is on the east side of town and could be constructed to be more easily accessed by a bus. This option would create fair transit services.

Preliminary Cost Estimate: $23,000

Key Considerations/Impacts: This is more at the east end of town, not as central. This does not include any or agreement for a sheltered stop placement.

Improvement Option B: Change stop location to Umpqua Bank

Vicinity Map Option B



Description: The Rogue Valley Commuter Line stop would be moved to parking lot of Umpqua Bank located at 110 Pine Street. This location has been an old Greyhound bus stop in the past.

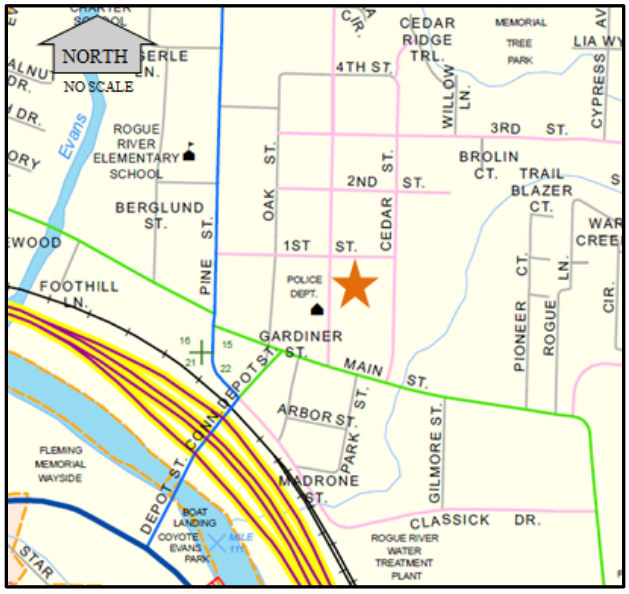
Benefits: This should serve the community well as it is west of a central location and could be constructed to be easily accessed by a bus. This option is closer to the private assisted living business. This option would create fair transit services.

Preliminary Cost Estimate: $23,000

Key Considerations/Impacts: Parking may be affected. This does not include any agreement for a stop or shelter placement.

Improvement Option C: Stay with Rogue River Community Center

Vicinity Map Option C



Description: Leave stop location in existing location.

This location is central and easily accessed by a bus.

Benefits: This should serve the community well as it is central and more easily accessed by a bus. This option would keep good transit services.

Preliminary Cost Estimate: $0

Key Considerations/Impacts: No notice to give about changes of stop location.

Operations and Safety

The operation and safety alternatives are shown in Table 7. These address the deficiencies in a number of ways including restricting and the rerouting traffic flows in the downtown area. Some alternatives create issues at other intersections and include mitigation for those impacts. There are significant issues surrounding the close proximity of the interchange and the downtown intersections. Except for relatively minor improvements on the I-5 off-ramps, any considerations for revamping the interchange area are too detailed and expensive for a TSP and have been bundled in a recommendation for a refinement study.

Table 7: Operations and Safety Alternatives and Options

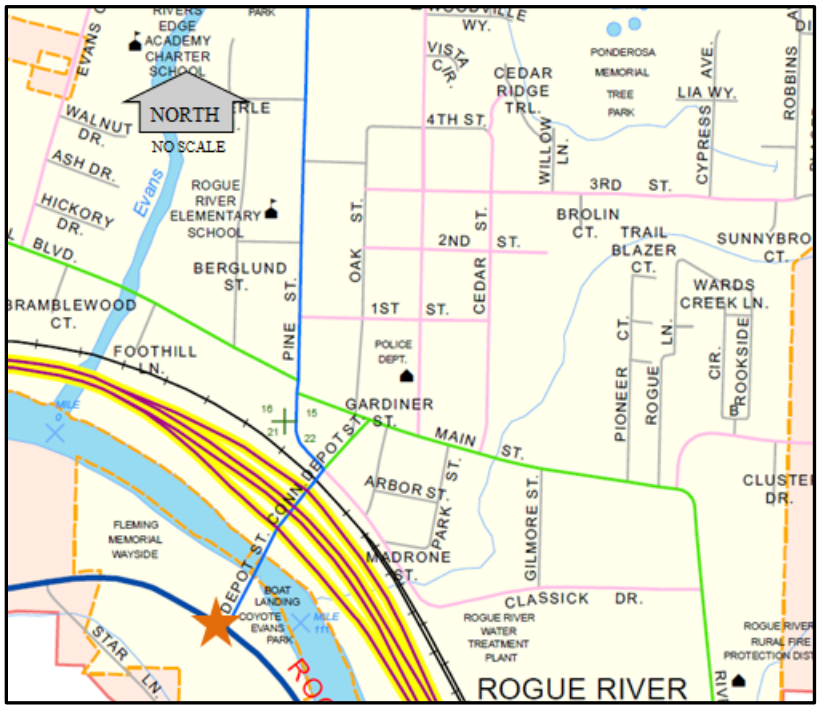
Option	Description	2040 V/C	CRF[1]	Estimate	Agency
OS2 Depot Street and OR99					
A	Add SB left turn lane	0.67	0.47	$300,000	ODOT
OS3 Depot St and E Main St					
A	Move Depot St NB left	0.36	n/a	$23,000	City
B	Close NB Oak St access	0.37	0.13	$35,000	
C	Close Oak St	0.37	0.25	$19,000	
D	Depot St NB one-way /roundabout	0.35	0.47	$270,000	
E	All-way stop	1.24	0.75	$36,000	
F	Close Depot St	0.30	0.25	$1,619,000	
OS4 Depot St and Pine St/Classick Dr Intersection					
A	Close Classick Dr	0.70	0.25	$9,000	City
B	Close Depot St /roundabout	0.46	0.25	$246,000	
C	Classick Dr right in only	0.63	0.47	$5,000	
D	Depot & Oak St NB one-way	0.70	0.47	$10,000	
E	Pine, Depot, & Classick one-way	0.53	0.47	$13,000	
F	Pine St through movement	0.54	0.47	$14,000	
OS5 Depot Street and SB I-5					
A	Extend SB off-ramp	n/a	0.41	$103,000	ODOT
B	Extend SB off-ramp, widen bridge	n/a	0.41	$4,386,000	
C	Increase SB queue storage	n/a	n/a	$103,000	
E	Interchange refinement study	n/a	n/a	$750,000	
OS7 Depot Street and NB I-5					
A	Extend NB off-ramp	n/a	0.41	$1,026,000	ODOT
B	Widen NB off-ramp	0.86	0.27	$619,000	
OS8 Main St and Pine S					
A	Align W Main St and E Main St	1.08	n/a	$1,344,000	City
B	SE corner channelization island	1.14	n/a	$100,000	
C	Compact roundabout	0.59	0.88	$250,000	
D	Pine St SB/Depot St NB one-ways	0.50	0.47	$1,010,000	

[1]Crash reduction factors (CRF) shows the percent reduction (in decimal form) in crashes that might be expected after implementing the improvement.

OS2 Depot Street and OR99

Deficiency: This intersection will have a significant southeast bound left turning queue on OR99 that may not be expected by southbound drivers. This may lead to an increased amount of rear-end collisions. Vehicles waiting to turn will not have anywhere to go as there will be queues propagating back from the interchange. There will be a 275 foot south eastbound left turning queue in the peak hour of 2040. Not having a turn bay may increase rear-end collisions.

Vicinity Map



Improvement Option: Add left turn lane

Description: Build a left turn lane for the eastbound left turn from OR99 to Depot Street.

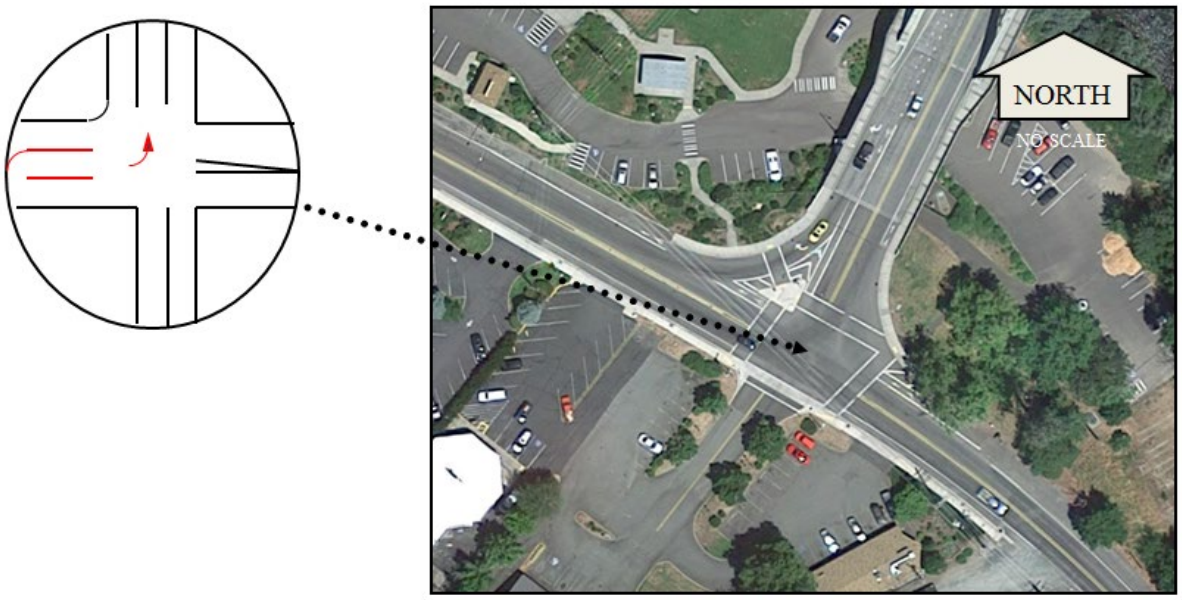
Benefits: Allows for storage and deceleration distance and avoids potential rear-end collisions if a longer queue is present. This improvement is for safety. The v/c ratio becomes 0.67, below the 0.85 standard. The Crash Reduction Factor (CRF) for adding a left turn lane on a four leg intersection is 0.47.

Preliminary Cost Estimate: $300,000

Key Considerations/Impacts: The new turn lane may require additional right-of-way which will affect adjacent properties. Adding a turn lane will widen the west crosswalk by 12' increasing the pedestrian exposure to traffic. There may be additional impacts from driveway access on the south side of OR99 if current center median is extended west. There is currently a barrier on OR99 making the driveway into Skunk Rx a right in/out access. Skunk Rx does share a parking lot and an access with Rogue River Press. This gives them access to the full movement intersection of Depot Street and OR99. The new turn lane is limited to 200 feet due to the Best Western at the Rogue needing access.

The southern access will become a right in/out due to the new turn lane. The northern access of the Best Western at the Rogue will have full access.

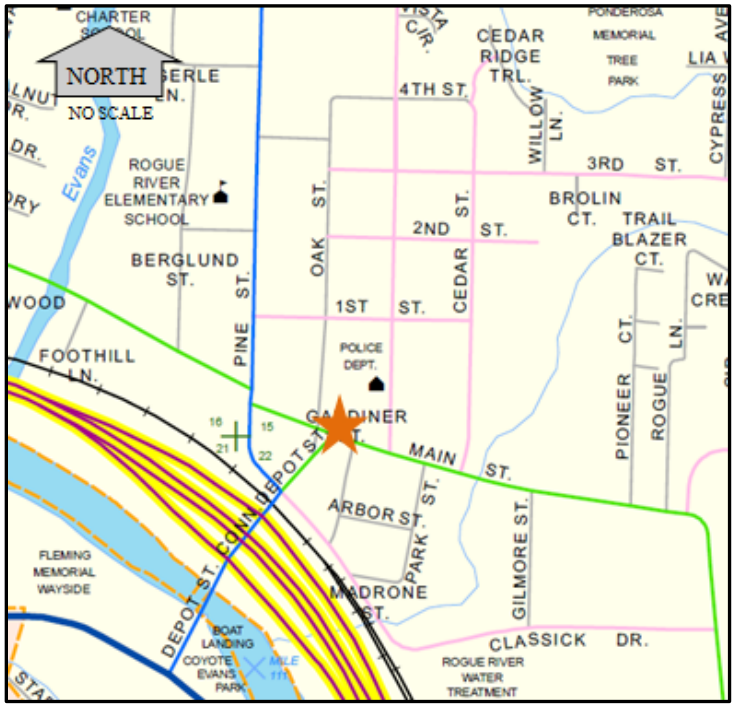
Intersection Diagram



OS3 Depot Street and Main Street

Deficiency: Intersection operation will likely be affected by queuing extending from the adjacent Main & Pine Street and Pine & Depot Street intersections. There will be congestion with slowing speeds on a daily basis. The overall capacity here is low as the intersection is in a non-standard configuration. Intersection alignment should be investigated. As configured, the northbound movement is indirect and goes through two closely spaced intersections. Both intersection functional areas overlap, leading to increased chance of conflicts, collisions, and pedestrian crash. Drivers too-focused on maneuvering through the intersection might not see a pedestrian. This intersections ADT/C ratio is high at 10.36. Preliminary Signal Warrants (PSW's) were not met for this intersection.

Vicinity Map



<u>Improvement Option A:</u> <u>Move Depot Street northbound left lane left of tree</u>

Description: The northbound left/through lane will be moved left of the tree. The through movement would be a straight northbound movement this way, not requiring multiple turns. The southernmost crosswalk is moved north and crosses from in front of Subway to what is now the tree in the pork chop island. The current left turn lane becomes an expanded sidewalk with a crossing to the park restrooms.

Benefits: Allows for straight operation for through movements. This increases safety for pedestrians and bicyclists. Depot Street drivers approaching Main Street now get to encounter a crosswalk and then take a right turn onto E Main Street when permissible. These steps are now separated and easier one at a time. The right turning traffic does not have to look for pedestrians on either of the two crosswalks it currently crosses. This pulls parking out of the middle of the intersection on the east side and puts parking spots where they are safer, outside the intersection. The curb and sidewalk will reduce

occurrence of drivers driving the wrong direction on this short section of roadway. The intersection is more standard and appropriate in size. There is no reduction in the 0.36 V/C with this option, the intersection becomes safer and reduces delay. The Crash Reduction Factor (CRF) for moving a left turn lane on a four leg intersection is not known.

Preliminary Cost Estimate: $23,000

Key Considerations/Impacts: Some parking spots may be relocated. Parking in the southbound direction may be removed to allow room for through traffic.

Improvement Option B: Close northbound Oak Street access

Description: The northbound lane of Oak Street would be closed to Depot and Main Street.

Benefits: This eliminates the northbound through movement along with the eastbound left and westbound right movements. The Crash Reduction Factor (CRF) for removing an approach of a four leg intersection is 0.25. Only half of that should be used as only half of the approach is removed.

Preliminary Cost Estimate: $35,000

Key Considerations/Impacts: Drivers no longer have the option to proceed east from that intersection. Could be combined with Option A. May create out-of-direction travel for drivers wishing to travel north on Oak Street. Current pedestrian and parking issues not addressed in this option. The V/C ratio rises slightly from 0.36 to 0.37.

Improvement Option C: Close Oak Street

Description: Close Oak Street in both directions and install curb and sidewalk**.**

Benefits: This eliminates the northbound through movement along with all other turns to and from the north Oak Street leg. This makes intersection alignment not as much of an issue converting it into a "T" intersection. Could create a couple additional parking spots on Main Street in additional to potential parking would be created behind the sidewalk. A curb extension for the NW corner would be added in increase pedestrian visibility. This simplifies an intersection that is too large and poorly aligned. This is much safer for pedestrians walking on the north side of the intersection. The V/C ratio rises slightly from 0.36 to 0.37. The Crash Reduction Factor (CRF) for removing an approach of a four leg intersection is 0.25.

Preliminary Cost Estimate: $19,000

Key Considerations/Impacts: Drivers no longer have the option to proceed north from that intersection. Could be combined with Option A. May create a net increase parking spots.

Improvement Option D: Convert Depot Street to northbound one-way

Description: Depot Street becomes a one-way northbound street from Classic Drive to East Main Street.

Benefits: This allows the through traffic that would have been on the right side of the tree to be on the left. Northbound traffic is left of the tree; the northbound right turn lane is retained. This increases safety for pedestrians and bicyclists. Depot Street drivers approaching Main Street now get to encounter a crosswalk and then take a right turn onto E Main Street when permissible. These steps are now separated and easier one at a time. The right turning traffic does not have to look for pedestrians on either of the two crosswalks it currently crosses. This pulls parking out of the middle of the intersection on the east side and puts parking spots where they are safer, outside the intersection. The curb and sidewalk will reduce occurrence of drivers driving the wrong direction on this short section of roadway. The intersection is more standard with an improved alignment and appropriate in size. The Depot Street and East Main Street intersection V/C ratio lowers slightly from 0.36 to 0.35. The Depot Street and Pine Street intersection V/C ratio also lowers from 0.72 to 0.68. The Crash Reduction Factor (CRF) for converting to a two-way street to a one-way street is 0.47.

Preliminary Cost Estimate: $270,000

Key Considerations/Impacts: Drivers wishing to travel south would need to relocate to Pine Street, most currently do that movement. This retains most of the parking spots along Depot Street. This could combine with Option A. This option must be done concurrently with OS4 Option D. The East Main Street and Pine Street intersection V/C ratio rises from 1.08 to 1.39 and now meets preliminary signal warrants which will also require OS8 Option C (Pine/Main roundabout) . A Pine/East Main Street roundabout with bypass lane on the east to north will have a worst leg showing a V/C ratio of 0.68 and LOS C.

Improvement Option F: Close Depot Street

Description: Depot Street would be converted into a local access/parking street between Classick Drive and East Main Streets. Depot (OR99 to railroad tracks) and Pine Street become the through movement, with only a right off onto Classick Drive for movement to the southwest. Access to Depot Street (Classick Drive to East Main Street) could be obtained from Classick Drive (in only) and would exit via the old northbound right turn lane (right out only). The intersection would be a "T" intersection with Oak Street. The east crosswalk at Depot would be moved west to be adjacent to Oak Street. Traffic bumps and other calming measures could be used to discourage any through traffic.

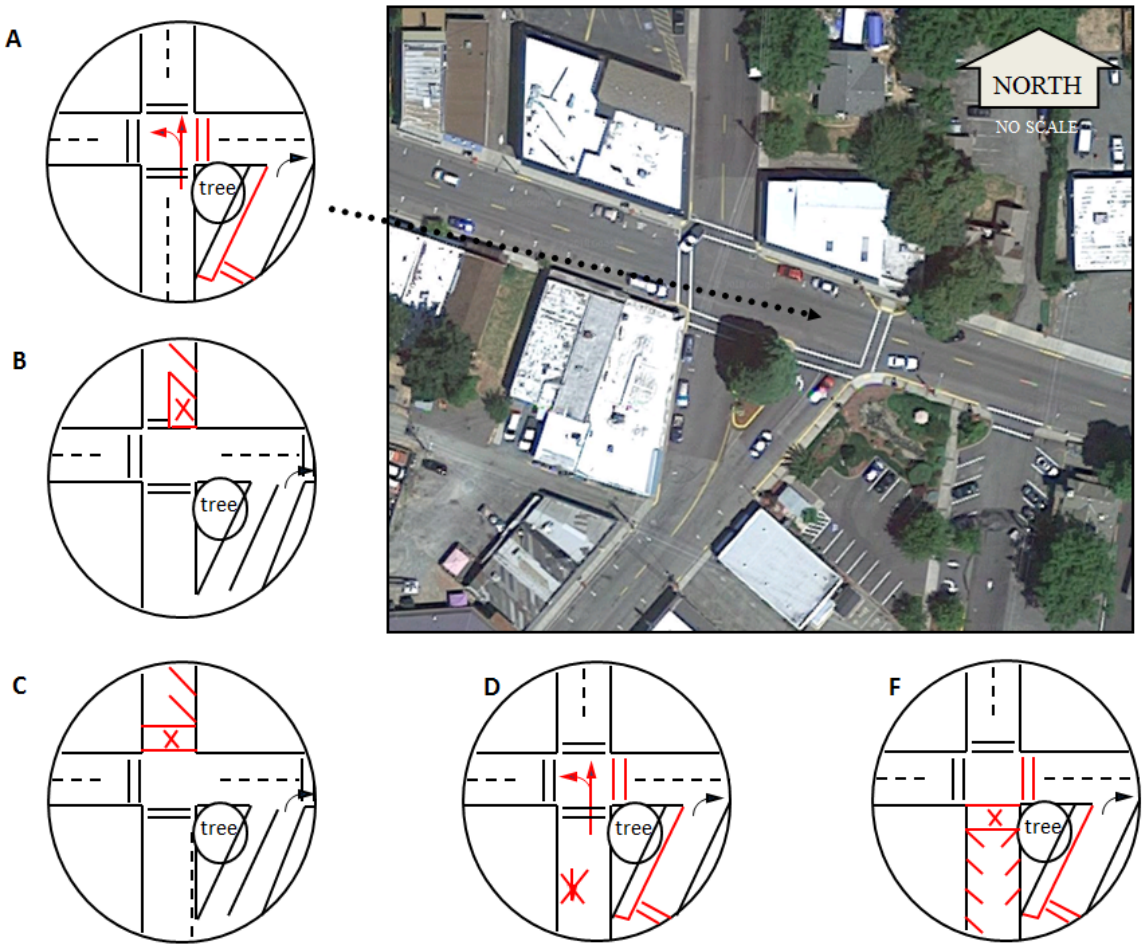
Benefits: The East Main Street intersection with Oak Street would be simplified and would make it safer and easier for all modes to traverse. The parking that is currently inside the intersection would be to the outside making it a standard expected configuration. The parking conversion could potentially add street parking for visitors. The Depot Street and East Main Street intersection V/C ratio lowers from 0.36 to 0.30. The Depot Street and Pine Street intersection V/C ratio also lowers from 0.72 to 0.67. The Crash Reduction Factor (CRF) for removing an approach of a four leg intersection is 0.25.

Preliminary Cost Estimate: $1,619,000

Key Considerations/Impacts: Could increase parking on Depot with conversion to diagonal. Could increase out of direction travel and put more volume through the Pine/Main Street intersection. The East Main Street and Pine Street intersection V/C

ratio rises from 1.08 to 1.91 and now meets preliminary signal warrants. Adding a signal and left turn bays to this location will reduce the V/C ratio to 0.85. This would be a large skewed intersection that would suffer from alignment issues. This would take away parking on East Main Street and Pine Street. This would likely require the relocation of the business on the southeast corner, as well as the parking lot on the northwest corner.

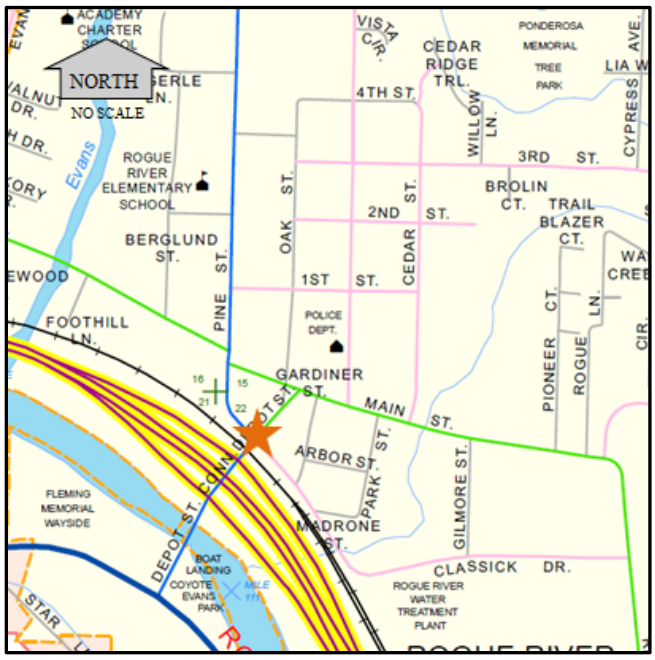
Intersection Diagrams



OS4 Depot Street and Pine Streets/Classick Drive Intersection

Deficiency: This intersection functions differently as it is a three-way stop at a four-way intersection. The intersection of Depot Street with Pine Street and Classick Drive is too close to railroad tracks and to the I-5 northbound ramp terminal intersection. The functional area, which includes distance traveled during reaction, deceleration, and maneuvering time plus distance for queue storage, overlaps between the two. Functional area overlaps create too much for a driver to process at once which can lead to an increased rate of crashes.

Vicinity Map



<u>Improvement Option A:</u> <u>Close Classick Drive</u>

Description: Classick Drive will be closed for all movements at the Pine/Depot Street intersection.

Benefits: This simplifies an intersection by removing turn movements that are generally over capacity and have long delays. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.70. The Crash Reduction Factor (CRF) for removing an approach of a four leg intersection is 0.25.

Preliminary Cost Estimate: $9,000

Key Considerations/Impacts: May create some parking spots at the stub end of Classick Drive. This provides a safer pedestrian walkway without a street crossing on this leg. Trucks would have to use the interchange to the south, at Twin Bridges Road.

<u>Improvement Option B:</u> <u>Close Depot Street</u>

Description: The north leg of Depot Street will be closed to all movements at the Pine/Depot Street intersection.

Benefits: This changes the through movement to be Pine Street. This simplifies an intersection by removing turn movements that are generally over capacity and have long delays. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.61. The Crash Reduction Factor (CRF) for removing an approach of a four leg intersection is 0.25.

Preliminary Cost Estimate: $246,000

Key Considerations/Impacts: Drivers no longer have the option to proceed northeast on Depot Street which could increase out-of-direction travel and add more volume to the Pine/Main Street intersection. This provides a safer pedestrian walkway without a street crossing on this leg. This does cause the V/C to slightly rise at Pine and East Main Street, 1.08 to 1.18, so Project OS8-C (Pine/Main roundabout) is also required. With OS8-C a roundabout at Pine & Main Streets becomes LOS C and a V/C of 0.72.

Improvement Option C: Classick Drive right-in only

Description: Classick Drive becomes a right-in only. Classick Drive becomes a one way street away from this intersection to the end of Classick Drive at North River Road.

Benefits: This northbound right turn movement is not stopped unless yielding to a pedestrian. There is no interruption or delay from cars entering the intersection from Classick Drive. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.63. A CRF of 0.47 should be applied to Classick Drive due to it becoming a one-way street.

Preliminary Cost Estimate: $5,000

Key Considerations/Impacts: Drivers no longer have the option to drive west on Classick Drive, creating some out of direction travel and potentially add more volume to the Pine/Main Street intersection. This will help trucks keep their current stop and route, including exiting via North River Road to the next interchange. The pedestrian conflict on this leg still exists, but is reduced as eastbound volume is removed. This will also give pedestrians crossing midblock only one direction and one point of risk on the one lane of Classick Drive.

Improvement Option D: Depot and Oak Street northbound one-way

Description: Depot Street and Oak Street would become northbound one-way streets from Classick Drive to the end of Oak Street.

Benefits: This allows the through traffic that would have been on the wrong side of the tree to be in what is now the oncoming lane. Alignment is resolved. Traffic progresses with fewer movements at the intersection. This will also help with the traffic around the elementary school. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.70. A Crash Reduction Factor (CRF) of 0.47 should be applied to Depot Street and Oak Street due to it becoming a one-way street.

Preliminary Cost Estimate: $10,000

Key Considerations/Impacts: Southbound drivers would need to travel on Broadway Street or Pine Street, most do at this time because of the operational difficulties at this

intersection. This will also give pedestrians crossing midblock only one direction and one point of risk on the one lane of a one way street. This option retains most of the parking spots. This must be done concurrently with OS3 Option D.

Improvement Option E: Pine, Depot, and Classick Drive one-way

Description: Pine Street becomes a southbound one-way street. Depot Street becomes a one-way northbound street. Classick Drive becomes a one way southbound street.

Benefits: This will result in safer operation for pedestrians, bicyclists, and vehicles by simplifying movements at the intersections. This orientation will be a far better operation and flow of traffic. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.53. A Crash Reduction Factor (CRF) of 0.47 should be applied to Pine, Depot, and Classick Drive due to becoming one-way streets.

Preliminary Cost Estimate: $13,000

Key Considerations/Impacts: May increase the amount of parking. This will help trucks keep their current stop and route, including exiting via North River Road to the next interchange. This will also give pedestrians crossing midblock only one direction and one point of risk on the one lane of these one way streets. This may increase out-of-direction travel. This will improve operations at the Pine/Main Street intersection, V/C lowers from 1.08 to 1.04. The Depot and East Main Street intersection V/C climbs to 0.64.

Improvement Option F: Pine Street through movement

Description: The through movement is realigned to be to/from Pine/Depot streets. Classick Drive becomes a right in only. Depot Street becomes a right only. Classick Drive and Depot Street become one way eastbound and northbound streets till they end.

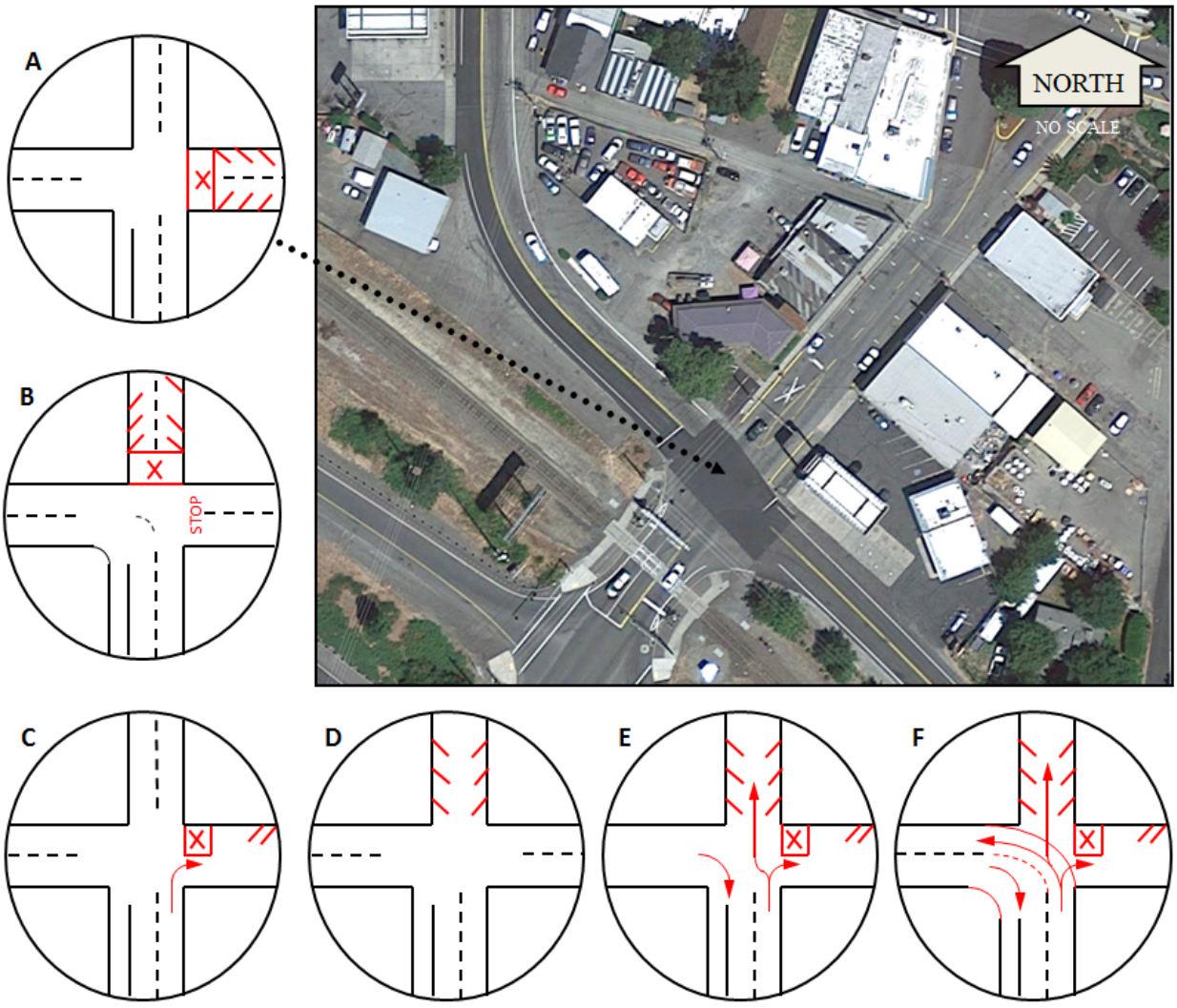
Benefits: The west and south legs of the intersection becomes a through move with a couple of optional right turns. This will result in better operation. Pedestrian and bicycle movements will become safer as less turning conflicts are present. This should reduce queues and delays at this location. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.54. A Crash Reduction Factor (CRF) of 0.47 should be applied to Depot Street and Classick Drive due to becoming one-way streets.

Preliminary Cost Estimate: $ 14,000

Key Considerations/Impacts: May create some parking. This option makes the intersection more difficult to cross as the SW corner is not accessible. Pedestrians will need to travel out- of- direction and use the sidewalk on the east side of Depot and cross back over at the I-5 southbound ramp terminal. This will also give pedestrians crossing midblock only less risk on streets that are no longer the through movement.

This will help trucks keep their current stop and route on Classick Drive, including exiting via North River Road to the next interchange.

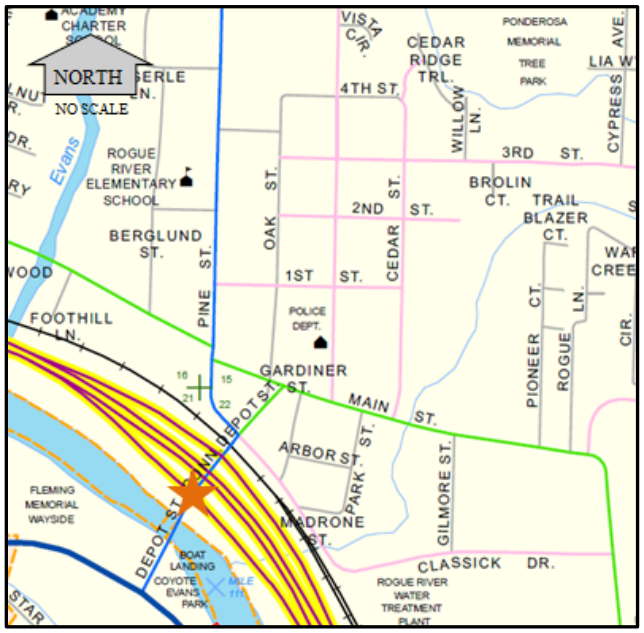
Intersection Diagrams



OS5 Depot Street and SB I-5

Deficiency: This signalized intersection will have queues in both directions on Depot Street radiating from the closely spaced nearby intersections. These queues are evident under existing conditions and will get worse. There will be an unreasonable delay due to queuing on all legs, especially on the exit ramp. This intersection will exceed the standard of 0.85 in 2038; in 2040 this intersection will have a V/C of 0.87 and have an ADT/C ratio of 9.10.

Vicinity Map



<u>Improvement Option A:</u> <u>Extend I-5 southbound off-ramp</u>

Description: Extend the southbound I-5 off-ramp 100 feet, just short of the Evans Creek bridge.

Benefits: This moves the deceleration zone back, could potentially increase the sight distance to queued vehicles and allows for a larger queue storage area. A Crash Reduction Factor (CRF) of 0.41 should be applied for the ramp being lengthened.

Preliminary Cost Estimate: $103,000

Key Considerations/Impacts: The extended ramp could require additional right-of-way.

<u>Improvement Option B:</u> <u>Extend I-5 southbound off-ramp & widen Evans Creek bridge</u>

Description: Extend the southbound I-5 off-ramp across to the north side of the Evans Creek bridge.

Benefits: This moves the off-ramp to a straighter I-5 section which will improve sight distance to the diverge area. The deceleration zone is also moved back which will allow for a larger queue storage area. A Crash Reduction Factor (CRF) of 0.41 should be applied for the ramp being lengthened.

Preliminary Cost Estimate: $4,386,000

Key Considerations/Impacts: The extended ramp could require additional right-of-way. The widened bridge structure could create bank and waterway impacts. Not all bridge types are widenable.

Improvement Option C: Increase southbound queue storage

Description: The existing turn lanes on the southbound off-ramp will be extended 300 up the ramp to increase the storage capacity

Benefits: This allows for up to twice the queue storage length, this should minimize queues extending into the deceleration portion of the ramp.

Preliminary Cost Estimate: $309,000

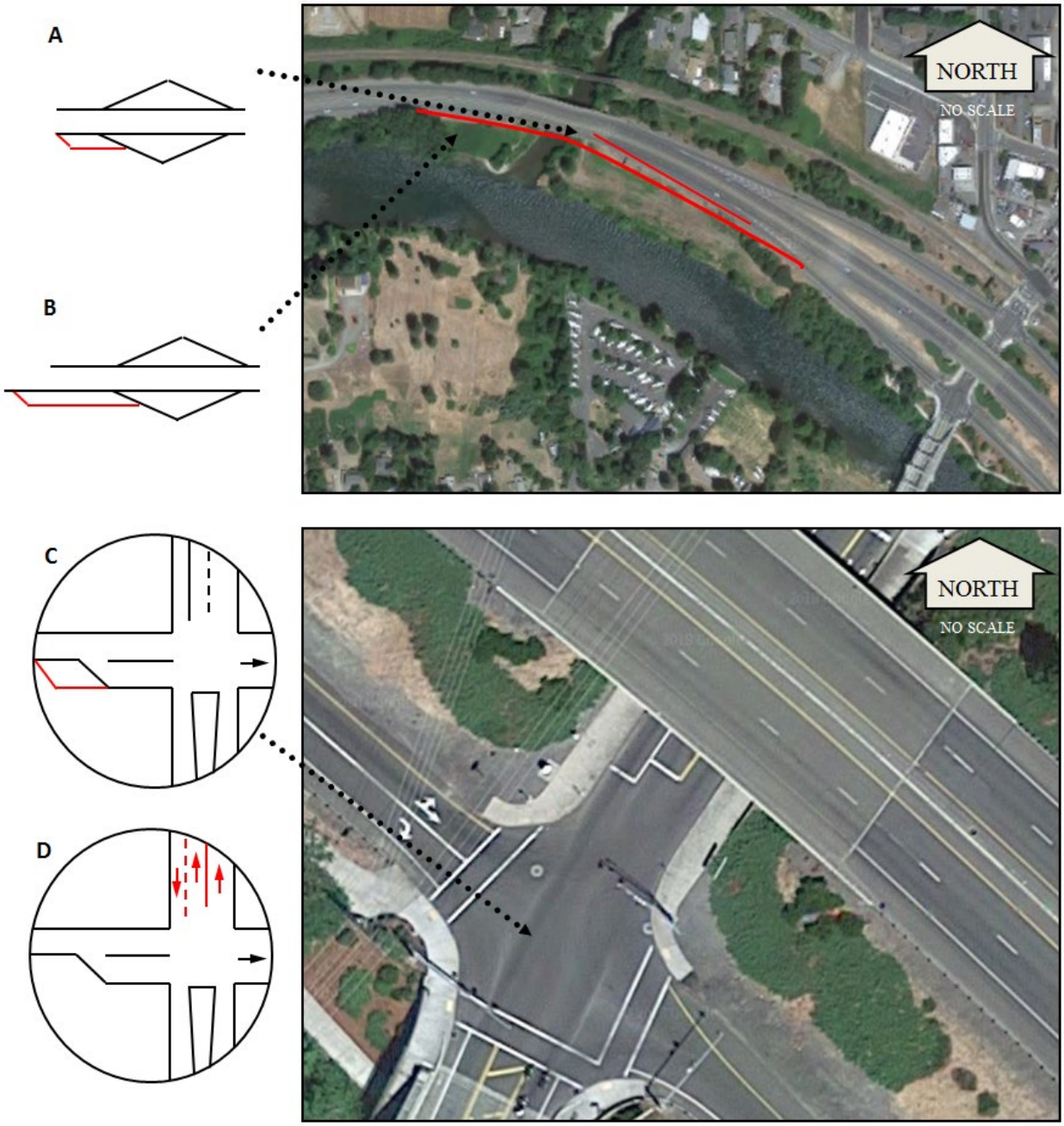
Key Considerations/Impacts: Lengthening the turn bays may require additional right-of-way which will have property impacts. Potential river bank or Rogue River Greenway impacts with the widened roadway.

Improvement Option E: Interchange refinement study

Description: A separate refinement plan or updated IAMP will be required to investigate more intensive changes to the interchange area.

Preliminary Cost Estimate: $750,000

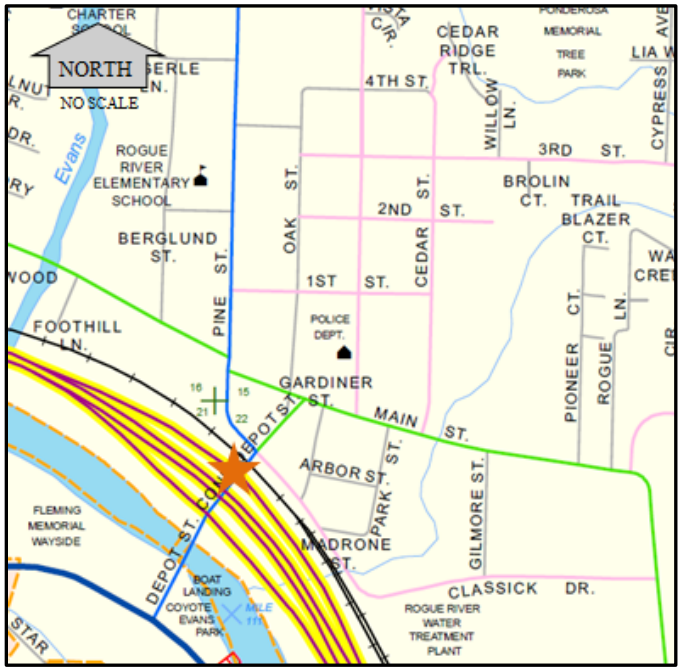
Intersection Diagrams



OS7 Depot Street and NB I-5

Deficiency: This signalized intersection will have queues in both directions on Depot Street radiating from closely spaced nearby intersections. These queues are evident today under existing conditions and will get worse in the future. There will be unreasonable delay and queues on all legs, especially the exit ramp. In 2040 this intersection will be at standard with a V/C of 0.85 and also have an ADT/C ratio of 10.36.

Vicinity Map



<u>Improvement Option A:</u> <u>Extend I-5 northbound off-ramp</u>

Description: Extend the I-5 northbound off-ramp 1000 feet

Benefits: This moves the ramp deceleration zone back and allows for a larger queue storage area. This will not increase the v/c ratio. A Crash Reduction Factor (CRF) of 0.41 should be applied for the ramp being lengthened.

Preliminary Cost Estimate: $1,026,000

Key Considerations/Impacts: The extended ramp may require additional right-of-way which will have property impacts. Advertising billboards may need to be moved.

<u>Improvement Option B:</u> <u>Widen 1-5 northbound off-ramp</u>

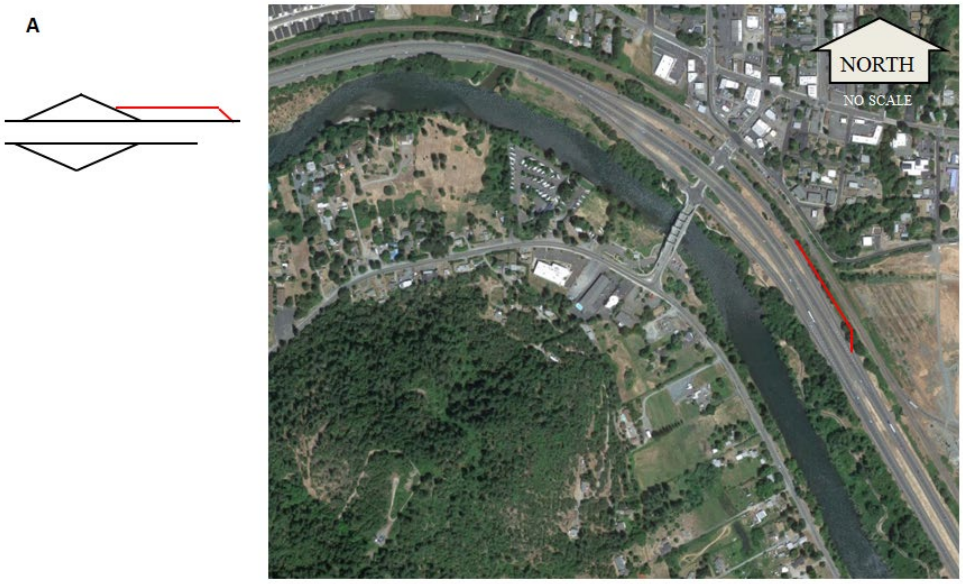
Description: The northbound off-ramp will be widened to accommodate two 600 foot turn lanes extended up the ramp to increase the storage capacity. This will be just short of Ward Creek. One lane will be a right turn only; the other lane will be for through and left turn movements.

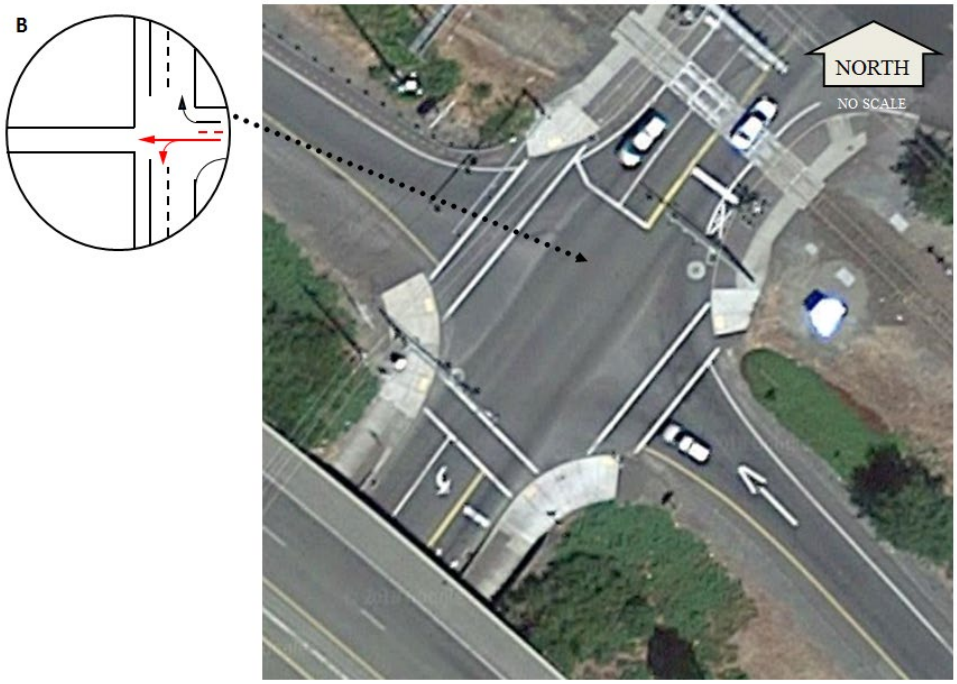
Benefits: This allows for up to twice the queue storage length. This option essentially does not increase the v/c ratio, with a v/c ratio of 0.86. A Crash Reduction Factor (CRF) of 0.27 should be applied for adding a right turn lane.

Preliminary Cost Estimate: $619,000

Key Considerations/Impacts: The widened ramp may require additional right-of-way however the railroad is adjacent to this location, so widening in that direction might not be best. Widening in the other direction may require retaining walls to accommodate widening the ramp. The turning radii may be a concern for longer vehicles. This option could be combined with Option A to maximize turn lane storage especially when a train is passing through the Depot Street crossing.

Intersection Diagrams

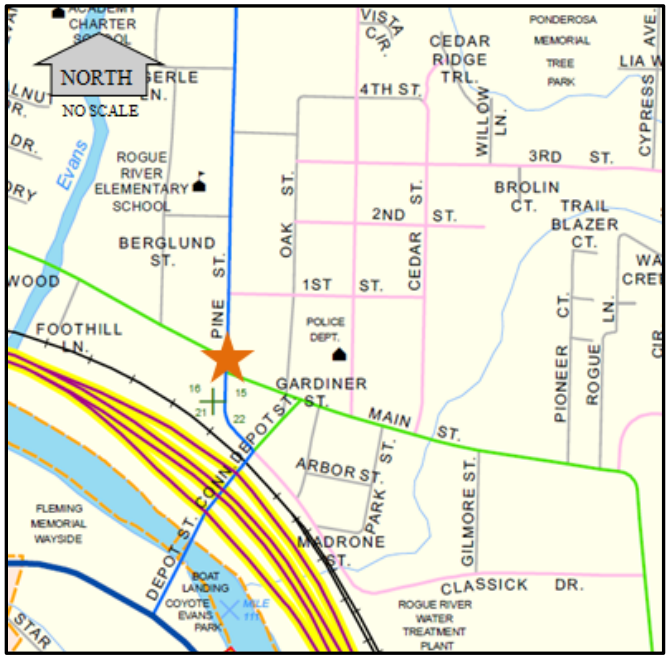




OS8 Main Street and Pine Street

Deficiency: Intersection operation will likely be affected by queuing extending from the adjacent Main & Pine Street and Pine & Depot Street intersections. There will be congestion with slowing speeds on a daily basis. The overall capacity here is low as the intersection is in a non-standard configuration. The skewed alignment of this intersection should be investigated. As configured, the east and westbound movements are relatively indirect as the east and west legs are offset. Drivers too-focused on maneuvering through the intersection might not see a pedestrian. In 2035 this intersection exceeds standard of 0.95 V/C and is at a V/C ratio of 1.00 in 2037. In 2040 this intersection should be over capacity with a V/C ratio of 1.08 and an ADT/C ratio of 12.94. Preliminary Signal Warrants (PSW's) were not met at this intersection.

Vicinity Map



<u>Improvement Option A:</u> <u>Align West Main Street and East Main Street</u>

Description: The through movements of West Main and East Main Street should be aligned removing the skew. The through movements would both be straight movements and would make the intersection safer and more efficient.

Benefits: Allows for straight operation for through movements with less delay. Making this intersection more compact will make it easier to see who drove up first (for all-way stop operation) to the intersection or if someone is walking in the crosswalk. This increases safety for pedestrians and bicyclists. The v/c is not affected by this option and remains at 1.08.

Preliminary Cost Estimate: $1,344,000

Key Considerations/Impacts: The realigned Main Street legs will require additional right-of-way which will have property impacts. Some parking spots may be lost. This

may require the take of a building. This needs to be combined with another alternative to address congestion at this location.

Improvement Option B: Add SE corner channelization island

Description: Create a right turn channelization island (like the NW corner) in the southeast corner of the intersection.

Benefits: Tire marks on the pavement indicate that the high approach skew makes the northbound right turn difficult. Adding the island will increase the turn radius and make it easier to accommodate larger vehicles. The V/C ratio increases to 1.14.

Preliminary Cost Estimate: $100,000

Key Considerations/Impacts: Adding this island will require substantial additional right-of-way which is a large impact. The island will increase the overall pedestrian crossing but the island will give a refuge between the through and right turn movements. This needs to be combined with another alternative to address congestion at this location.

Improvement Option C: Convert to a compact roundabout

Description: Convert the intersection into a compact roundabout at this intersection.

Benefits: A compact roundabout would give equal priority to all legs which will minimize queues. Bicycle traffic could use the sidewalks or share the lane as traffic speeds will be slow. Pedestrian crossings will be kept short which will improve safety and visibility. Main Street would be the same priority as Pine Street. This will improve the intersection operation and safety. As well as a safety improvement the operations improved. The worst leg of this roundabout is on the east leg, with a LOS of C (all others at LOS B) and a v/c ratio of 0.59 (all others below 0.49). The overall intersection control delay is 11.87, with a LOS of B. A Crash Reduction Factor (CRF) of 0.88 should be applied for a roundabout.

Preliminary Cost Estimate: $250,000

Key Considerations/Impacts: Some additional right-of-way will be required for north and east legs which will have property impacts. All entering legs would then be yield controlled. Fewer takes of property than with fully fixing alignment and skew.

Improvement Option D: Pine Street southbound one-way (Depot Street, northbound one-way)

Description: This simplifies intersection in that there are fewer approaches. Fewer points of entry is safer for pedestrians.

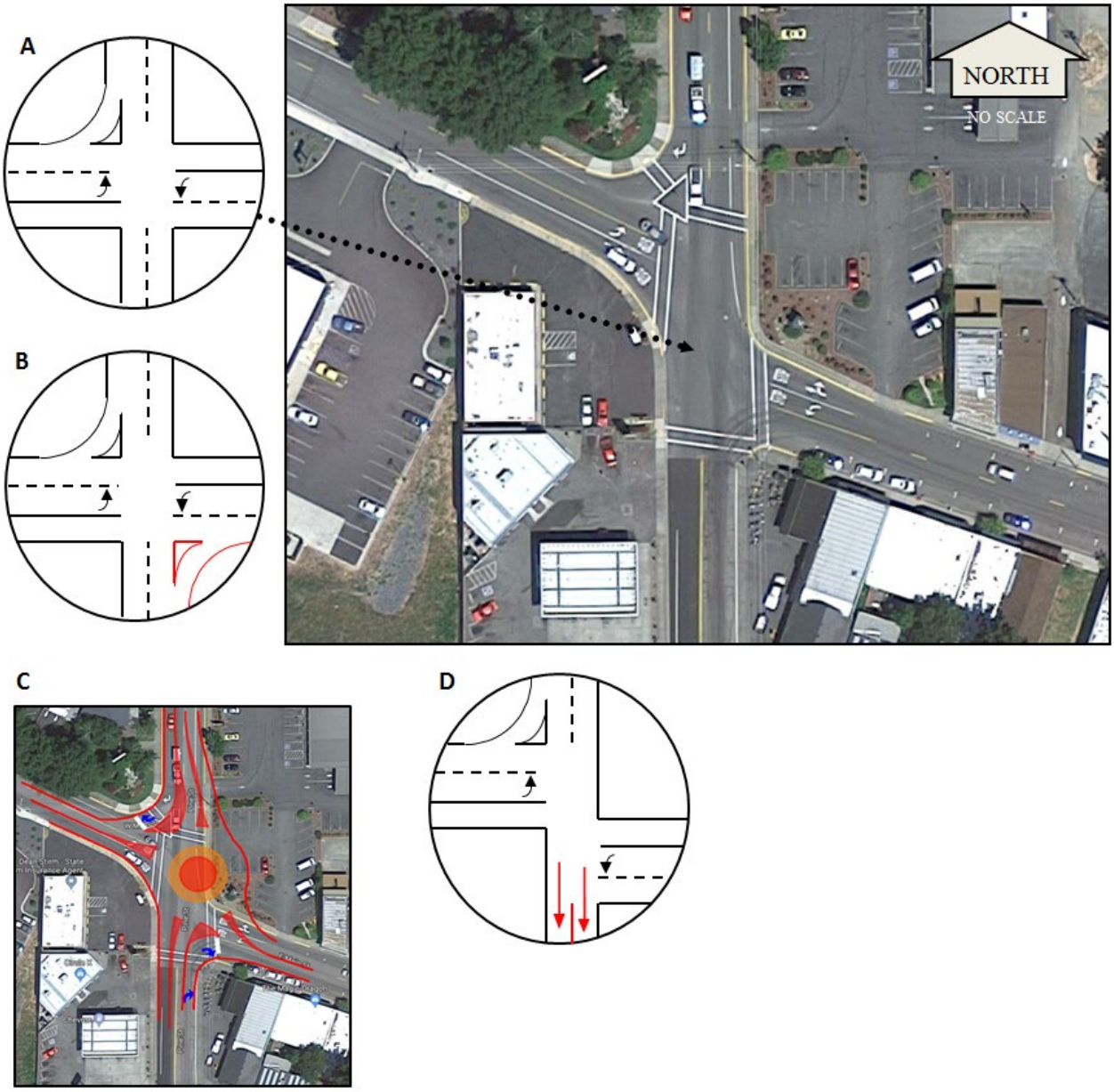
Benefits: Intersection is easier to keep track of with fewer operations. The studied intersection of East Main Street and Pine Street has an improved V/C from 1.08 to 1.06 and meets preliminary signal warrants. As a signal this intersection has a V/C of 0.44. As a side benefit, the intersection of Depot Street and Pine Street has a V/C that improves from 0.72 to 0.50. A Crash Reduction Factor (CRF) of 0.47 should be applied to Pine and Depot Streets due to becoming one-way streets.

Preliminary Cost Estimate: $1,010,000

Key Considerations/Impacts: May create more use of E Main Street. More eastbound right turns would occur at East Main Street and Depot Street. The V/C ratio of East Main Street and Depot Street rose from 0.36 to 0.87, but did not meet preliminary signal warrants.

Notes: Changes here will affect Depot Street intersections

Intersection Diagrams



Connectivity

Connectivity is an issue for the City of Rogue River. There are issues with how the city has grown and natural barriers: creeks, rivers, and other elements of nature. They may be manmade but under other jurisdictions: railroads, highways, or powerlines. There is a need to expand the existing network to reduce traffic on existing major streets. Table 8 shows connectivity alternatives. The alternatives generally reflect street segments that combine to create a route, but are in shorter segments for better likelihood of funding.

Table 8: Connectivity Alternatives and Options

Option	Description	Estimate	Agency
C2 Connectivity Over Evans Creek			
A	3rd St	$7,325,000	City
B	7th St	$15,088,000	
C	Near high school	$8,851,000	County
C4 3rd Street Extension to East			
A	Blue Ridge Dr	$4,353,000	City/ County/ Developer
B	East of Blue Ridge Dr	$9,748,000	
C5 Grow with a Grid			
A	Roadway parallel west of W Evans Crk Rd	$8,652,000	City/ Developer
C6 Broadway Extension			
A	Extend Broadway St to Classick Dr	$1,274,000	City
B	Extend Broadway St to Classick Dr/Depot St	$1,649,000	
C7 7th Street Extensions			
A	West Evans Creek Rd to B or C St	$4,879,000	County/ Developer
B	Broadway St west to Pine St	$2,158,000	City
C	Broadway St east to Scenic Dr	$9,735,000	City/County/ Developer
D	Scenic Dr east to Tenney Dr	$8,118,000	

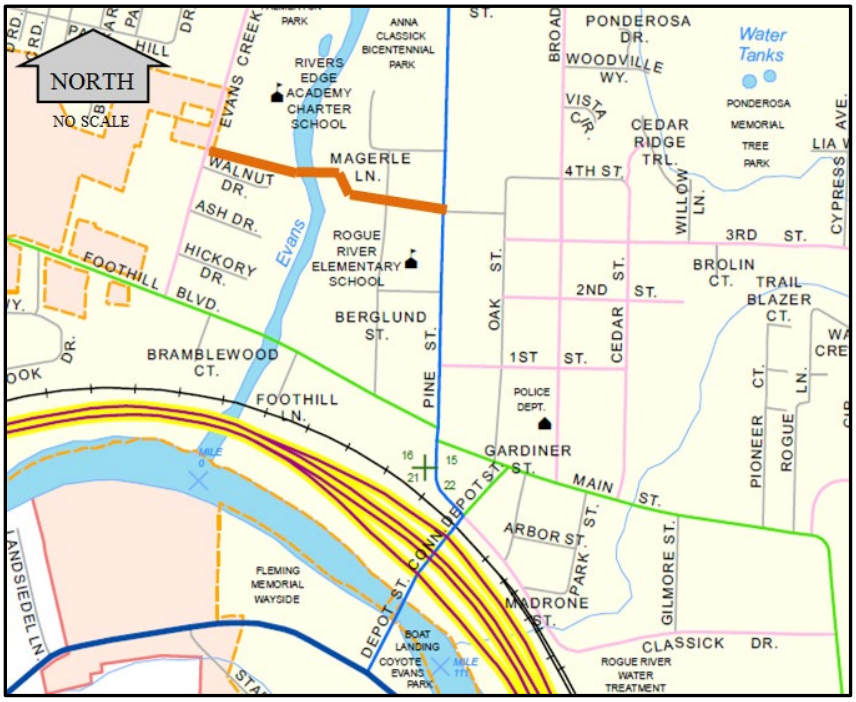
C2 Connectivity Over Evans Creek

Deficiency: Connections are needed across Evans Creek at different locations for modes that include vehicles and perhaps one for just bicycle/pedestrians. Possible locations are 3rd Street, 7th Street, and further north. This will cut down out of direction travel and reduce travel and burden on the intersection of Main and Pine Street. This creek is a limiting factor in terms of day to day travel and emergency alternative routes.

Improvement Option A: Add 3rd Street extension and new Evans Creek structure

Description: Add an extension of 3rd Street. This extension would also include a new bridge structure over Evans Creek. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This would ease the vehicular demand placed on the West Main Street bridge and the Pine Street & West Main Street intersection. The V/C ratio of Pine Street & West Main Street improves from 1.08 to 0.92. The V/C ratio of Foothills Boulevard and West Evans Creek Road improves from 0.28 to 0.19. A bridge here will be the greatest help in creating parallel connectivity for all modes in the form of a continuous east-west street that fully serves the city. Locating a bridge here would provide emergency alternate routes and better response time. This will also provide designated comfortable places for pedestrians and bicycles to use to avoid mixing directly with vehicular traffic.

Preliminary Cost Estimate: $7,325,000

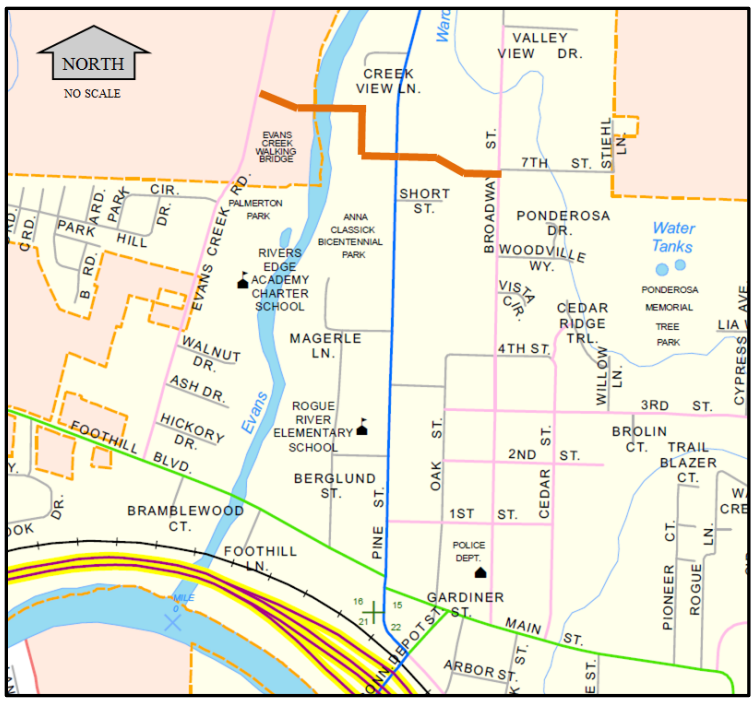
Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage, and floodway considerations need to be taken into account. Right-of-way will be a large consideration, requiring property impacts. The 3rd Street

route will require linear impacts along the edge of the elementary school field property. Vehicles, bicyclists, and pedestrians will be able to use the bridge across Evans Creek. The lighter demand on the Main Street and Pine Street intersection will benefit all modes. This connectivity creation will be a benefit to the community and to the middle and high school. 3rd Street may be the most fiscally responsible location for reasons of transportation need and due to the smaller cost elevate the structure out of a smaller flood plain.

Improvement Option B: Add 7th Street extension and new Evans Creek structure

Description: Add an extension of 7th Street from Pine Street to West Evans Creek Road. This extension would also include a new bridge structure over Evans Creek. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This would ease the vehicular demand placed on the West Main Street bridge and the Pine Street & West Main Street intersection but to a lesser degree than Option A as it is further away. The V/C ratio of Pine Street & West Main Street improves from 1.08 to 1.08. The V/C ratio of Foothills Boulevard and West Evans Creek Road improves from 0.28 to 0.24. A bridge at this location would help to provide emergency alternate routes and may provide a better response time and reduce out- of- direction travel for all modes. This will also provide designated comfortable places for pedestrians and bicycles to use to avoid mixing directly with vehicular traffic. This may actually cost significantly more to elevate the structure out of the flood plain.

Preliminary Cost Estimate: $15,088,000

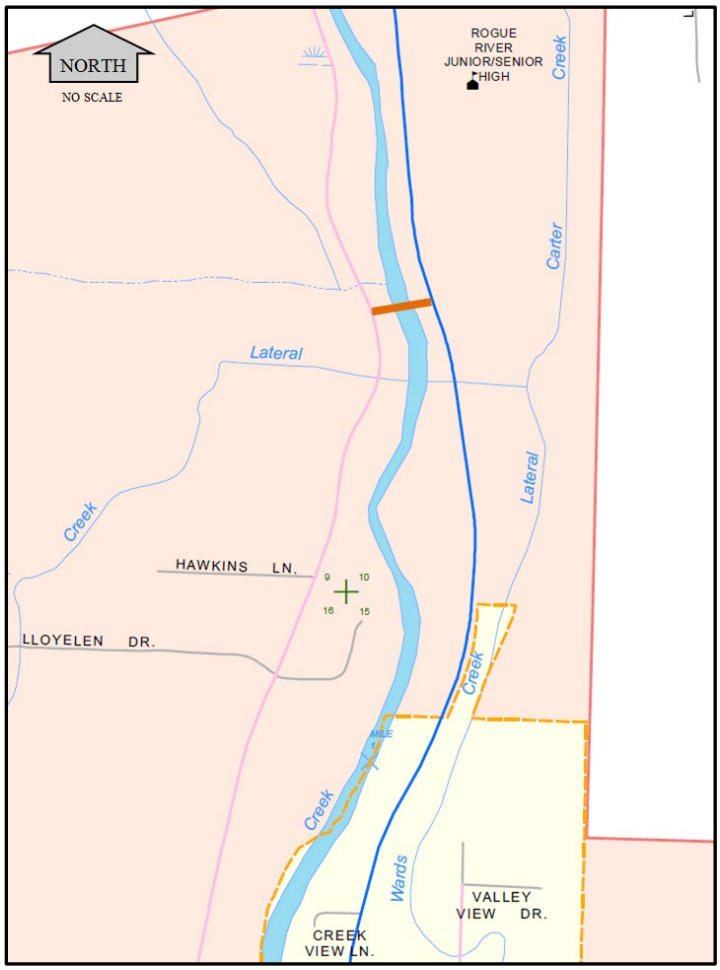
Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage, and floodway considerations need to be taken into account.

This connection is in the same general location as the Palmerton Park pedestrian structure, so there may be some duplication of what the city provides and maintains. Right-of-way will be a large consideration, requiring property impacts. The estimate does not include the probability of needing to raise or relocate the powerlines. Vehicles, bicyclists, and pedestrians will be able to use the bridge across Evans Creek. The lighter demand on the Main Street and Pine Street intersection will benefit all modes. This connectivity creation will be a benefit to the community and to the middle and high school.

Improvement Option C: Build new roadway connection with Evans Creek structure

Description: Add a connection between East and West Evans Creek Roads south of the middle/high school. This extension would also include a new bridge structure over Evans Creek. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This may aid the school in bus routing and those that walk or bicycle to the middle school. This will also provide designated comfortable places for pedestrians and bicycles to use to avoid mixing directly with vehicular traffic.

Preliminary Cost Estimate: $8,851,000

Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage, and floodway considerations need to be taken into account. Right-of-way will be a large consideration, requiring property impacts but this could be minimized depending on the specific location. The estimate does not include the probability of needing to raise or relocate the powerlines. This connection is outside of city limits but inside the UGB so there would be a need to coordinate with Jackson County.

Notes: C3 and C9 have been combined into C2.

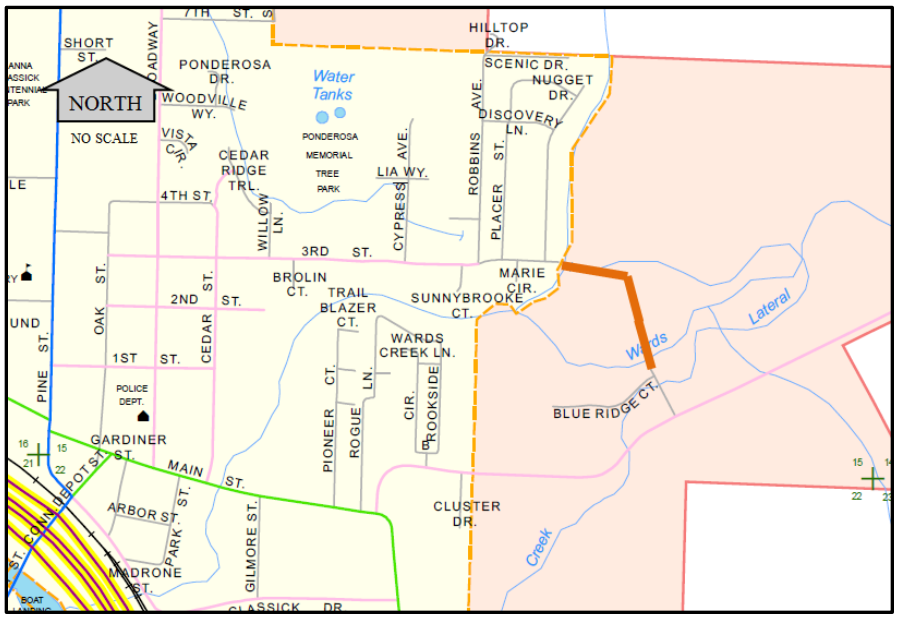
C4 3rd Street Extension to East

Deficiency: Ward Creek is a barrier to getting to the east part of town. There are a cluster of developments to the south of Ward Creek that will prevent east to west connections. 3rd Street should be extended east across Ward Creek and connect with Wards Creek Road. This connection over Ward Creek will create an alternate crossing.

Improvement Option A: Extend 3rd Street to connect to Wards Creek Road

Description: Extend 3rd Street from Nugget Drive to Blue Ridge Drive, bridging over Ward Creek. Blue Ridge Drive already exists from Ward Creek to Wards Creek Road. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This would ease vehicular demand on East Main Street by creating an alternate route using 3rd Street. This connection will improve connectivity for all modes along with creating alternate paths for emergencies and alternate routes for emergency vehicles. This creates connectivity the city needs for the least amount of cost and creates a starting point for development.

Preliminary Cost Estimate: $4,353,000

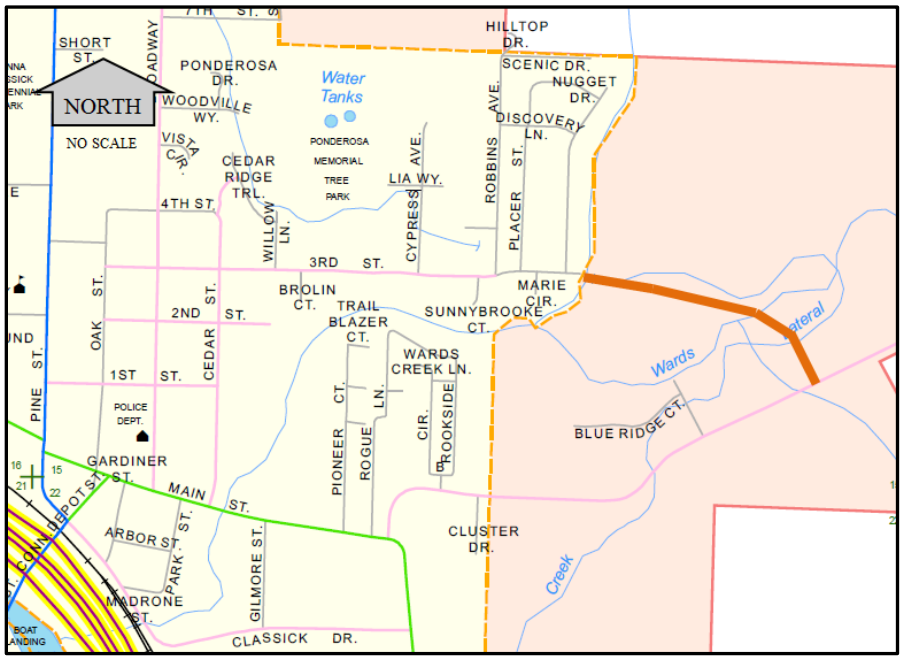
Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage may be a consideration. Right-of-way will be a large consideration, requiring property impacts. This improvement will likely depend on a developer.

Improvement Option B: Extend 3rd Street to Wards Creek Road east of Blue Ridge Drive

Description: Extend 3rd Street from Nugget Drive to Wards Creek Road, bridging over Ward Creek. The extension would be approximately 50' wide to accommodate two 11'

travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes. Option B would be approximately 2000’ to the east of Blue Ridge Drive.

Vicinity Map



Benefits: This would ease vehicular demand placed on East Main Street, creating an alternate route using 3rd Street. This location will improve connectivity for all modes along with creating alternate routes for emergency vehicles. This also creates connectivity and the city provides a large amount of roadway for easy development.

Preliminary Cost Estimate: $9,748,000

Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage may be a consideration. Right-of-way will be a large consideration, requiring property impacts. This improvement will likely depend on a developer.

Notes: P5, PV3, P11, P7, P2, and B7 are in this section. These bridge options are estimated with the same bridge width of 50 feet. This allows for eleven foot travel lanes, eight foot buffered bicycle lanes, and six foot sidewalks. A grid system could be developed between 3rd Street/Scenic Drive and Tenney Drive and Burbridge Drive. 3rd Street needs to be modified to a continuous alignment at Oak Street

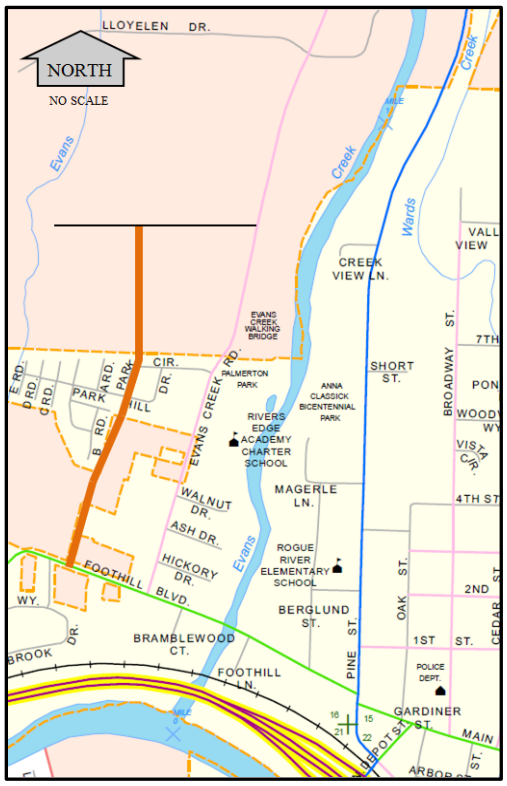
C5 Grow with a Grid

Deficiency: There is a lack of a grid network on the west side of W Evans Creek Road without a parallel road to W Evans Creek Road. This shows a needed alternate route for emergencies and development.

Improvement Option: Build roadway parallel to West Evans Creek Road

Description: Build a parallel roadway approximately 600' to the west of West Evans Creek Road. This route could potentially start near the intersection of Westbrook Drive and Foothills Boulevard, connect into the existing F and B Streets and extend to Road 36-4-16. This roadway would have two 12' travel lanes, six foot bike lanes, and six foot sidewalks.

Vicinity Map



Benefits: This will improve connectivity for all modes and could potentially decrease demand on West Evans Creek Road**.** This would also add a second local route for emergency vehicles.

Preliminary Cost Estimate: $8,652,000 based on 2400' feet of new roadway

Key Considerations/Impacts: Right-of-way will be a large consideration, requiring property impacts. The manufactured home park may be a barrier and/or income/diversity environmental justice issue for a connection south of Park Circle. This improvement is likely developer-based.

Notes: Could be a connection with C3 Option B at 7th Street.

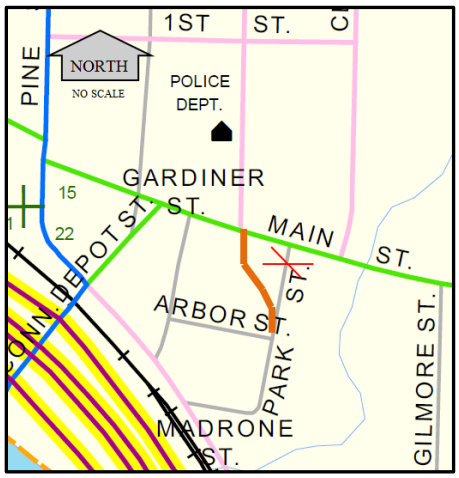
C6 Broadway Extension

Deficiency: Broadway could extend south of East Main Street by making a four way intersection and utilizing the Park Street alignment. The Classick /Madrone Street intersection should also need to be realigned to eliminate the skewed intersection alignment at Classick Drive.

Improvement Option A: Extend Broadway Street to Classick Drive

Description: Broadway Street would be extended from East Main Street, following the Park Street alignment to Classick Drive. A four-leg intersection will be created at Broadway Street and East Main Street. This extension would have two 11' travel lanes, six foot sidewalks, and eight foot buffered bike lanes.

Vicinity Map



Benefits: This would make this a more direct connection for all modes from East Main to Classick Drive. This could encourage development of this area south of East Main Street. This would be the best access to land that could be rezoned for several purposes from commercial, to mixed use, to a public property. This option offers redevelopment of downtown core and additional downtown parking. Depot and Main Street have retail and business developments that could expand to the area inside of Gardiner Street, Madrone Street, and Park Street over time.

Preliminary Cost Estimate: $1,274,000

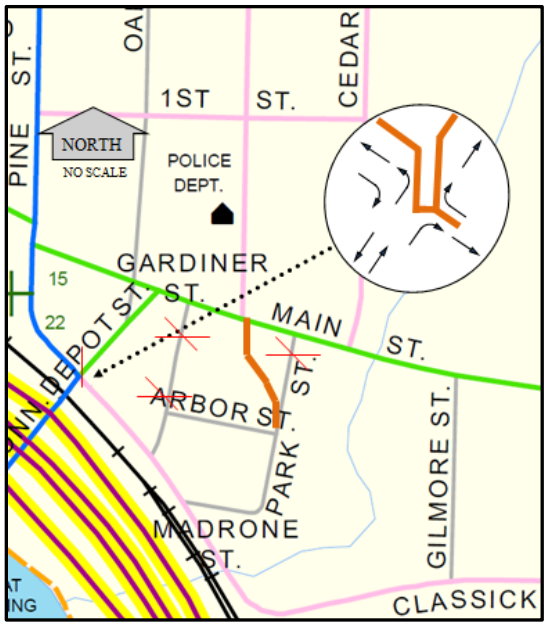
Key Considerations/Impacts: This option would create additional on-street parking downtown. The extended street will require additional right-of-way which will be a large consideration, requiring property impacts.

Improvement Option B: Extend Broadway Street to Classick Drive and Depot Street

Description: Extend Broadway Street as a one-way street south of East Main Street, onto the Park Street alignment to Classick Drive. A right turn only feeds into Classick Drive heading southeast. Depot Street would be a one way from Classick Drive to East Main Street. Classick Drive would only have a northwest bound right turn that would not have to stop as it will be the only lane feeding the now one-way Depot Street. A four-leg intersection will be created at Broadway Street and East Main Street. This extension

would have one 11' travel lane, six foot sidewalks, and eight foot buffered bike lanes. There would also be parking on either side of Broadway Street and Park Street. Gardiner Street would become a pedestrian and bicycle only street with farmers markets or similar events held here.

Vicinity Map & Intersection Diagram



Benefits: This could encourage development of this area south of East Main Street and Gardiner Street. This would be the best access to land that could be rezoned for several purposes from commercial, to mixed use, to light industrial. This option offers redevelopment of downtown core and additional downtown parking. Depot and Main Street have retail and business developments that could expand to the area inside of Gardiner Street, Madrone Street, and Park Street over time. Park Street could be closed where it connects to East Main Street.

Preliminary Cost Estimate: $1,649,000

Key Considerations/Impacts: This option would create additional on-street parking downtown. The extended street will require additional right-of-way which will be a large consideration, requiring property impacts.

C7 7th Street Extensions

Deficiency: 7th Street should be extended in both directions, past Ponderosa Park to Tenney Drive (use Scenic Drive), past Evans Creek.

Improvement Option A: Extend 7th Street west from West Evans Creek Road to B or C Street off of Park Hill Drive

Description: 7th Street would be extended west from West Evans Creek Road to B or C Street off of Park Hill Drive**.** This extension would include two 12' travel lanes; six foot sidewalks, and six foot bike lanes.

Vicinity Map

Benefits: This would create connections and an alternate route for all modes. This would ease the vehicular demand placed on East Main Street**.** This creates alternate routes for emergency vehicles and improves emergency response times. This extension allows for a very good connection into developable lands, adding to the financial base of the city and for future connectivity via a roadway from C Street south to Foothills Boulevard.

Preliminary Cost Estimate: $4,879,000

Key Considerations/Impacts: The extended street will require additional right-of-way which will be a large consideration, requiring property impacts. This will be a large boost to residential development in Rogue River. Most connectivity benefits will not be completely realized until most of the sections are in place.

Improvement Option B: Extend 7th Street from Broadway Street to Pine Street

Description: Extend 7th Street from Broadway Street west to Pine Street. This extension would include two 12' travel lanes; six foot sidewalks, and six foot bike lanes.

Vicinity Map

Benefits: This would create connections and an alternate route for all modes. This would ease the vehicular demand placed on East Main Street**.** This creates alternate routes for emergency vehicles and improves emergency response times.

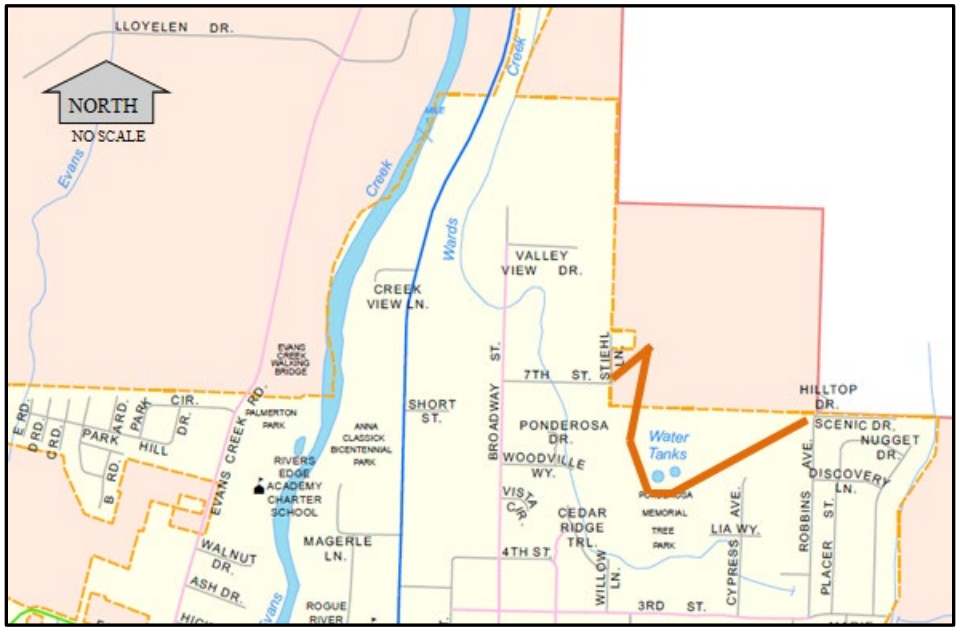
Preliminary Cost Estimate: $2,158,000

Key Considerations/Impacts: This could create parking. The extended street will require additional right-of-way, a large consideration requiring property impacts. Most of the connectivity benefits will not be completely realized until most of the sections are in place. This option is most logical to start with until a bridge is built across Evans Creek. This creates a grid or connection from Broadway Street to Pine Street, possibly lessening the traffic that uses Main Street at the intersections of these streets.

Improvement Option C: Extend 7th Street from Broadway Street east to Scenic Drive

Description: 7th Street would be extended east from Broadway Street to Scenic Drive. This extension would include two 12' travel lanes; six foot sidewalks, and six foot bike lanes. Due to grade this may curve around or near the water tank.

Vicinity Map



Benefits: This would create connections and an alternate route for all modes. This would ease the vehicular demand placed on E Main**.** This creates alternate routes for emergency vehicles and improves emergency response times.

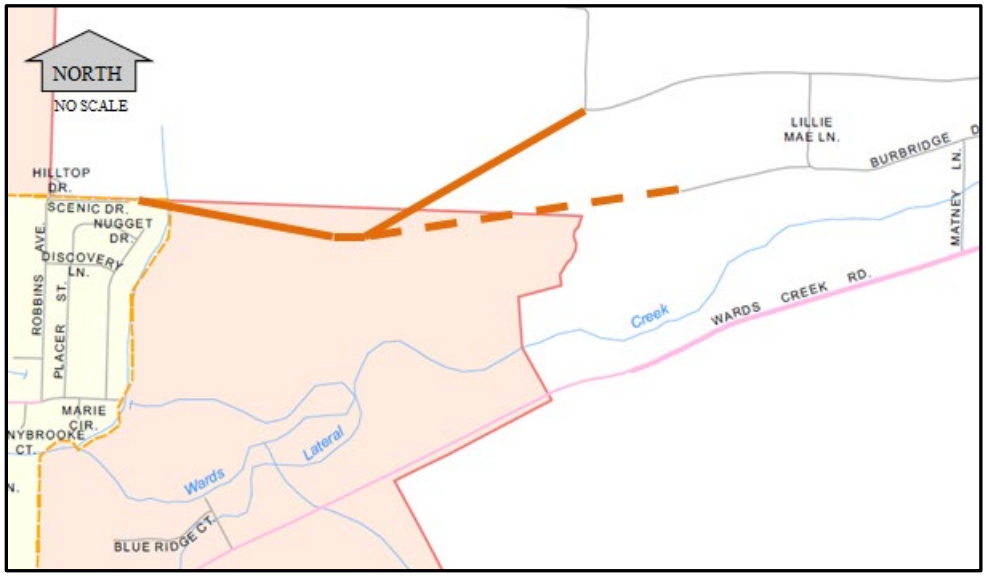
Preliminary Cost Estimate: $9,735,000

Key Considerations/Impacts: The extended street will require additional right-of-way which will be a large consideration, requiring property impacts. Most of the connectivity benefits will not be completely realized until most of the sections are in place. Right-of-way will be a large consideration, requiring property impacts. Grades will be involved, so this may also require retaining walls in some areas.

Improvement Option D: Extend 7th Street from Scenic Drive east to Tenney Drive

Description: 7th Street would be extended east from Scenic Drive to Tenney Drive or Burbridge Drive. This route will utilize the Scenic Drive alignment and then stay near the tree line.

Vicinity Map



Benefits: This would create connections and an alternate route for all modes. This would ease the vehicular demand placed on E Main**.** This creates alternate routes for emergency vehicles and improves emergency response times.

Preliminary Cost Estimate: $8,118,000

Key Considerations/Impacts: The extended street will require additional right-of-way, a large consideration requiring property impacts. Most of the connectivity benefits will not be completely realized until most of the sections are in place. Right-of-way will be a large consideration, requiring property impacts.

Notes: C2 Option B would also be required to make 7th Street a complete route to the west and should be lined up with future route in Option A. Option A is also related to C5. Options B, C, and D required for a complete route to the east of Pine Street.

C10 Code Updates

Deficiency: Future city code should require connectivity or two points of entry into a development from different streets. Entry points to be reviewed for connectivity and safety.

Improvement Option A: Don't allow self-centered developments

Description: Prohibit cul-de-sac style developments in the future. Create grid-style connectivity by connecting to more than one intersection or roadway location.

Benefits: This would help reduce excess miles traveled for all modes and time in emergency responses, and overall congestion.

Key Considerations/Impacts: It is hoped that this requirement will lead to more connectivity and facilities for all modes.

Improvement Option B: Require developments to not place homes at the end of a roadway stub

Description: Allow for future connectivity by not placing homes or other structures at the end of a roadway stub**.**

Benefits: This would enable the possibility of a future extension of that roadway.

Key Considerations/Impacts: It is hoped that this requirement will lead to more connectivity and facilities for all modes over time by not precluding potential locations. Better connectivity creates alternate routes for emergency vehicles and better response times.

Bridge

The ODOT 2016 Bridge Conditions Report states that area bridges are in fair condition and classified as "Not Deficient." Also, the Bridge Sufficiency Rating map showed bridges in the study area to be in the range of 58.9 to 93, greater than the poor condition threshold of 45. However, the I-5 bridges over Depot Street, Evans Creek, and Foothill Boulevard are noted to be seismically vulnerable and have "ballpark" retrofit estimates shown for each site in Table 9. The Depot Street Bridge over the Rogue River is noted as seismically resilient, not requiring retrofits.

The Main Street Bridge across Ward Creek is not deficient, but in part functionally outdated as it requires bicycles and vehicles to share a lane on the structure. Even if there were bicycle lanes on Main Street, bicyclists would still need to share the vehicular lane at the narrow bridge. The Classick Drive Bridge over Ward Creek is also functionally obsolete, narrow without sidewalks or bicycle lanes. Multiple alternatives are presented for these two locations in Table 9.

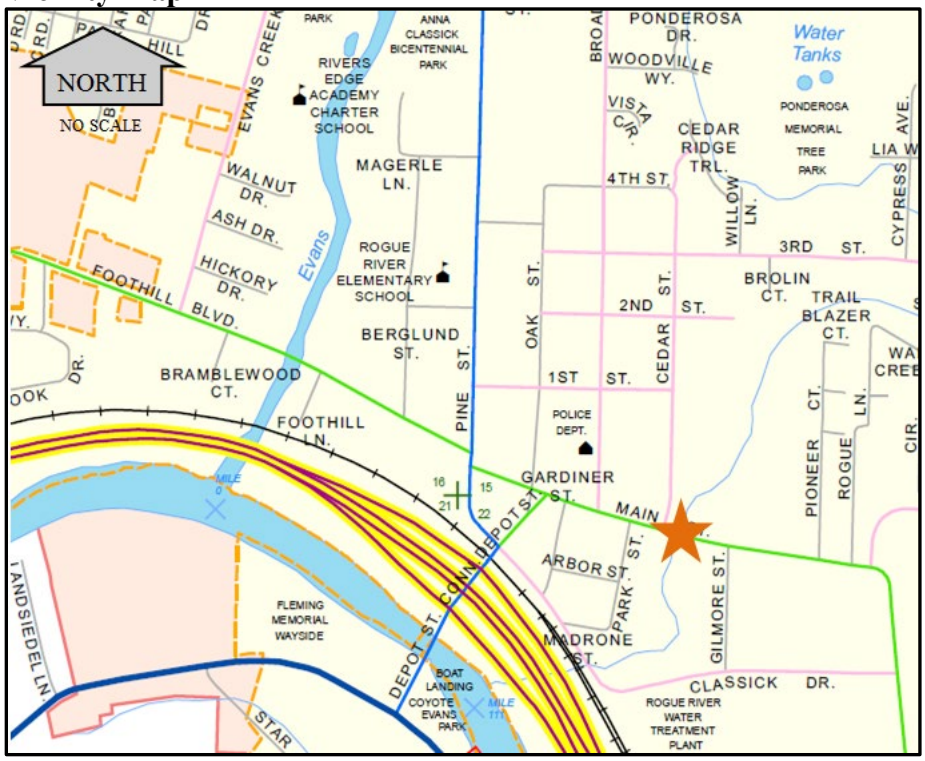
Table 9: Bridge Alternatives and Options

Option	Description	Estimate	Agency
BR1 Main Street Wards Creek, too narrow			
A	Shared lane markings	$1,000	City
B	Parallel ped/bicycle bridge	$203,000	
BR2 Classick Drive Wards Creek, too narrow			
A	Shared lane markings	$1,000	City
B	Parallel pedestrian/bicycle bridge	$91,000	
D	Replace structure	$438,000	
BR3 I-5 Depot Street, seismically vulnerable			
BR3	Overcrossing retrofit	$4,900,000	ODOT
BR4 I-5 Evans Creek, seismically vulnerable			
BR4	Overcrossing retrofit	$14,200,000	ODOT
BR5 I-5 Evans Creek, seismically vulnerable			
BR5	Overcrossing retrofit	$26,000,000	ODOT

BR1 Main Street and BR2 Classick Drive over Wards Creek

Improvement Option BR1A: Main Street bridge across Ward Creek: Add shared lane markings

Vicinity Map



Description: Add shared lane markings and signs approaching the bridge. The Main Street bridge across Ward Creek is in part functionally outdated as it requires bicycles and vehicles to share a lane on the structure.

Benefits: Shared lane markings and signs will help inform drivers that bicyclists will be entering the roadway and expected to be present in their lane regardless of bicycle facility improvements on either side of the structure.

Preliminary Cost Estimate: $1,000

Key Considerations/Impacts: The bicycle mode is not changed as they still need to use the sidewalk or share the lane currently, but vehicles are made aware of their existence. The bridge has already been improved with slight widening of the sidewalks on the bridge.

Improvement Option BR1B: Main Street bridge across Ward Creek: Build parallel pedestrian/bicycle bridge

Description: Build a minimum 8' wide parallel structure to Main Street for bicycle and pedestrian use only over Ward Creek. The Main Street bridge across Ward Creek is in part functionally outdated as it requires bicycles and vehicles to share a lane on the structure.

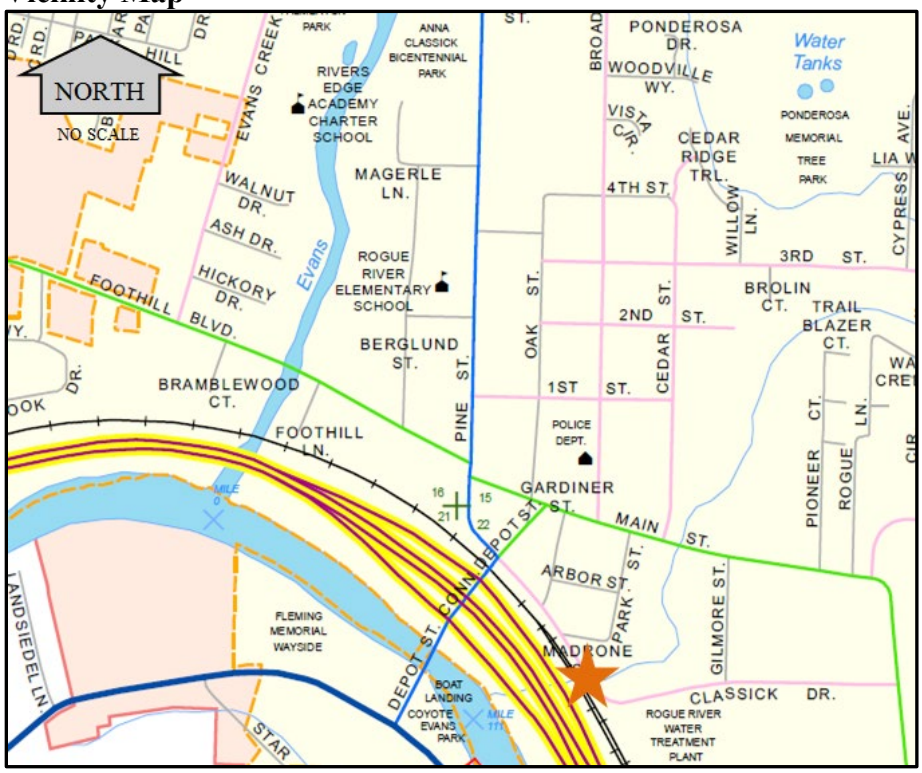
Benefits: This would give pedestrians and bicyclists their own separated location away from motor vehicle traffic which will improve comfort, safety and use. Younger and less confident riders would prefer a separated location instead of having to mix with vehicles or pedestrians.

Preliminary Cost Estimate: $203,000

Key Considerations/Impacts: Pedestrians would be relatively unchanged as they could still use the sidewalks. More confident and stress-tolerant bicyclists may still continue to use the vehicle lanes as the structure is short. Additional right of way will be required, impacting adjacent properties. Bridge construction will impact the banks and may have fish passage considerations.

Improvement Option BR2A: Classick Drive bridge across Ward Creek: Add shared lane markings

Vicinity Map



Description: Add shared lane markings and signs approaching the bridge. The Classick Drive bridge across Ward Creek is in part functionally outdated as it requires pedestrians, bicyclists, and motorists to share a lane on the structure.

Benefits: Shared lane markings will help inform drivers that bicyclists will be entering the roadway and are expected to be present in their lane regardless of the ultimate bicycle facility improvements on each side of the structure.

Preliminary Cost Estimate: $1,000

Key Considerations/Impacts: The bicycle mode is not generally impacted as they still share the lane with vehicles. No pedestrian facilities exist nor added in this option, so pedestrians still must share the roadway.

Improvement Project BR2B: Classick Drive bridge across Ward Creek: Build parallel pedestrian/bicycle bridge

Description: Build a minimum 10' wide parallel structure to Classick Drive for bicycle and pedestrian use only over Ward Creek. The Classick Drive bridge across Ward Creek is in part functionally outdated as it requires pedestrians, bicyclists, and motorists to share a lane on the structure. There should be a similar bridge paralleling this bridge to provide crossing for pedestrians and bicyclists.

Benefits: This would give pedestrians and bicyclists their own separated location away from motor vehicle traffic which will improve comfort and safety at this pinch point.

Preliminary Cost Estimate: $91,000

Key Considerations/Impacts: Full benefit of the new structure will not be realized until bike and pedestrian facilities are built along Classick Drive. Additional right of way will be required, impacting adjacent properties. Bridge construction will impact the banks and may have fish passage considerations.

Improvement Option BR2D: Classick Drive bridge across Ward Creek: Replace structure

Description: Replace the existing structure with a new approximately 50' wide structure. This would include two 11' travel lanes, six foot sidewalks and six foot bicycle lanes. The Classic Drive bridge across Ward Creek is in part functionally outdated as it requires all modes to share a lane on the structure.

Benefits: This would give pedestrians and bicyclists their own designated spaces to safely cross the creek separated from vehicular traffic. This would improve comfort and safety at this existing pinch point. A new bridge would provide for better vehicular, pedestrian, and bicycle access to North River Road. This would allow for heavier freight traffic on the truck route to Rogue River's heavy industrial zone with room for expansion.

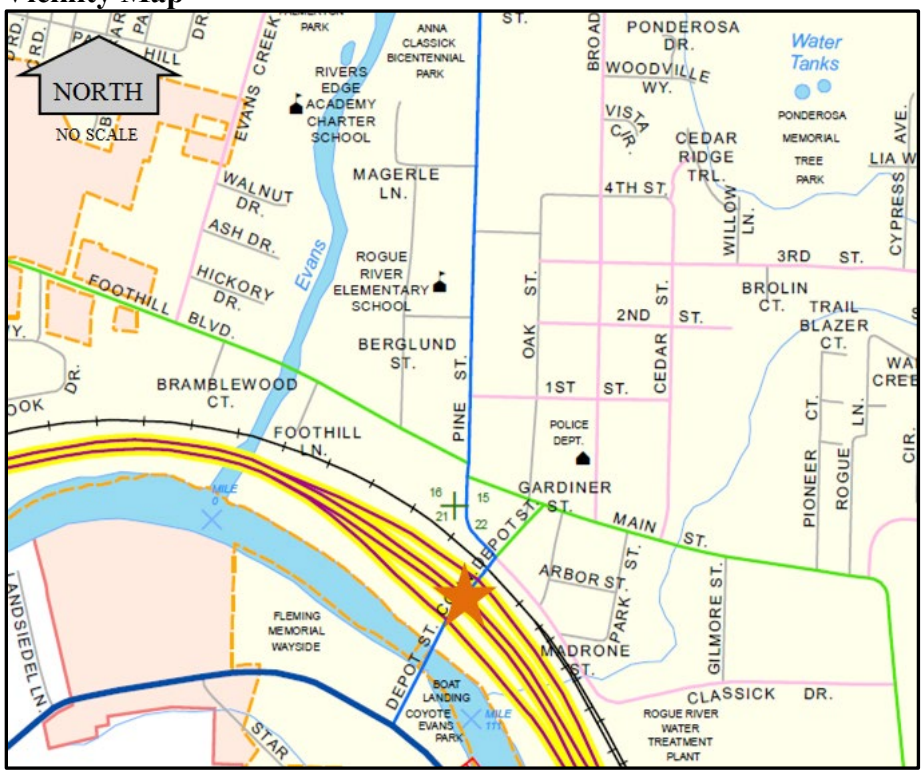
Preliminary Cost Estimate: $438,000

Key Considerations/Impacts: Full benefit of the new structure will not be realized until bike and pedestrian facilities are built along Classick Drive. Additional right of way will be required, impacting adjacent properties. Bridge construction will impact the banks and may have fish passage considerations. Roadway needs to remain open during construction to preserve truck route function which will increase staging costs and time.

BR3 to BR5 I-5 Overcrossings

Improvement Option BR3: I-5 Depot St overcrossing retrofit

Vicinity Map



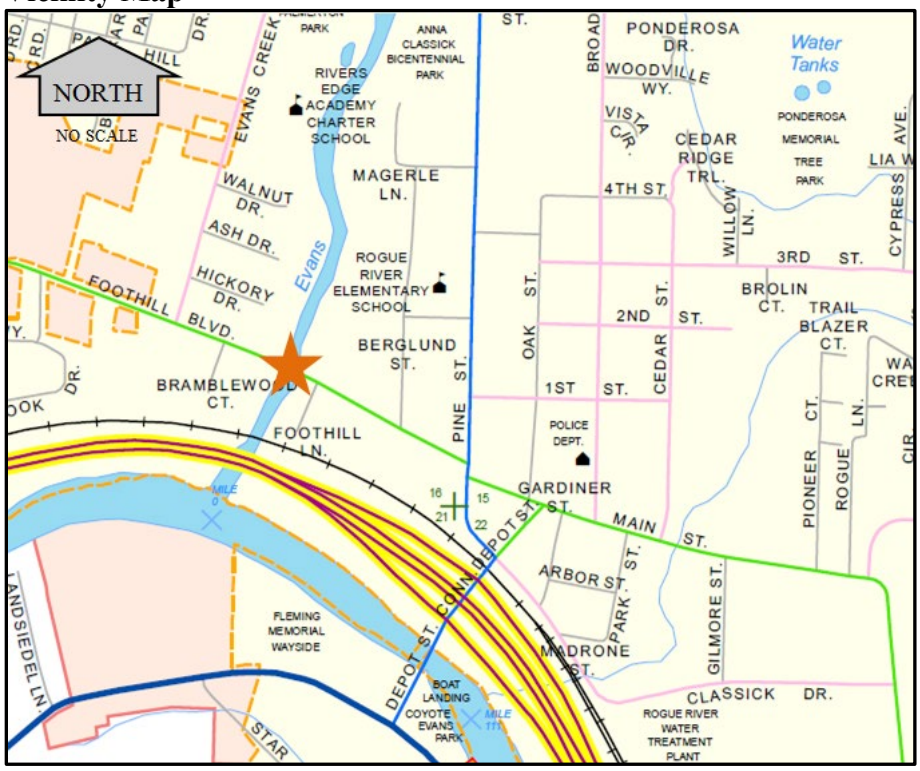
Description: Retrofit bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP) or a separate refinement plan.

Preliminary Cost Estimate: $4,900,000

Notes: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine.

Improvement Option BR4: I-5/Evans Creek overcrossing retrofit

Vicinity Map



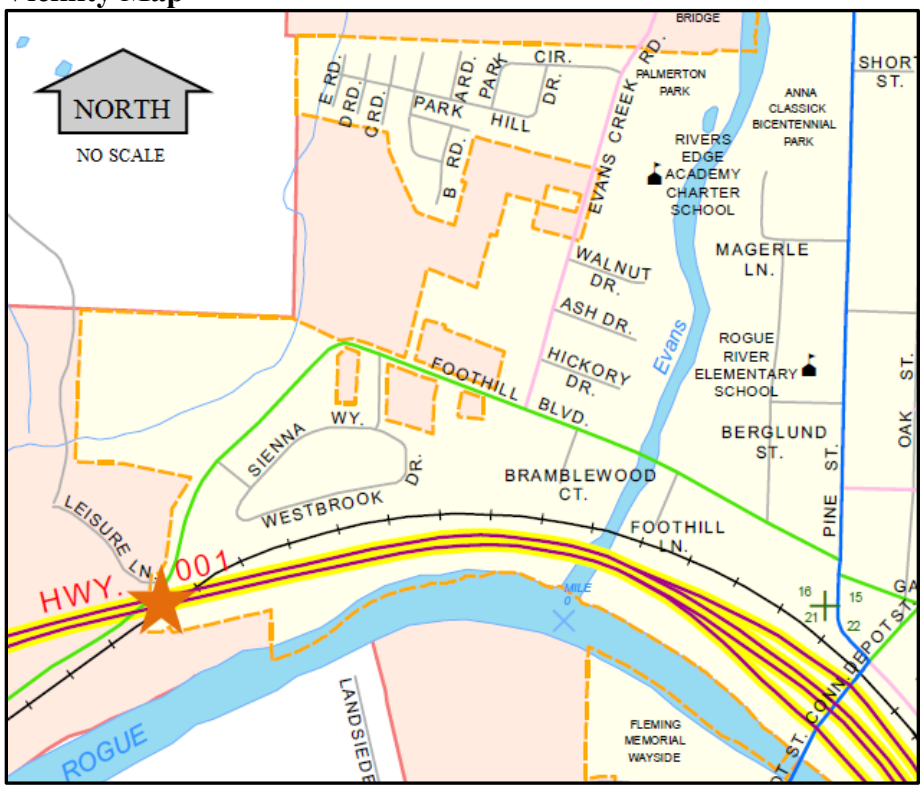
Description: Retrofit bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP), a separate refinement plan.

Preliminary Cost Estimate: $14,200,000

Key Considerations/Impacts: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine.

Improvement Option BR5: I-5/Foothills Blvd overcrossing retrofit

Vicinity Map



Description: Retrofit bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP), a separate refinement plan and/or a special engineering study.

Preliminary Cost Estimate: $26,000,000

Key Considerations/Impacts: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine.

Notes: Seismic retrofit estimates are based on a generic structure from Region 3 Bridge Section and are only preliminary estimates.

Pavement Conditions

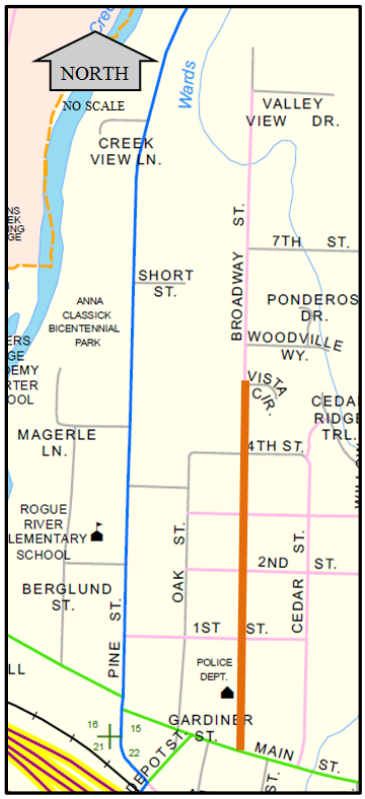
Pavement condition itself is an issue for creating connectivity. The condition of a roadway is a symbol of a community's health. OR99 is in fair condition; it is expected that some areas of OR99 will need a 2" resurface or chip seal in the 20-year horizon (likely in 5-10). The streets of Rogue River are overall in good condition and suggested improvements are based on information received from the City. Table 10 shows pavement alternatives.

Table 10: Pavement Alternatives

Option	Description	Estimate	Agency
PV1 Broadway Street Resurfacing			
PV1	Crack seal treatment	$66,000	City
PV2 Depot Street Resurfacing			
PV2	Crack seal and seal coat	$27,000	City/ODOT
PV3 Wards Creek Road Resurfacing			
PV3	Crack seal/Seal coat	$90,000	City
PV4 Foothill Boulevard Resurfacing			
PV4	Crack seal	$36,000	City
PV5 OR99 Overlay			
PV5	Resurface with an overlay	$1,330,000	ODOT

Improvement Project PV1: Broadway Street Resurfacing

Vicinity Map



Description: Resurface Broadway Street with a crack seal treatment. This is 50% done.

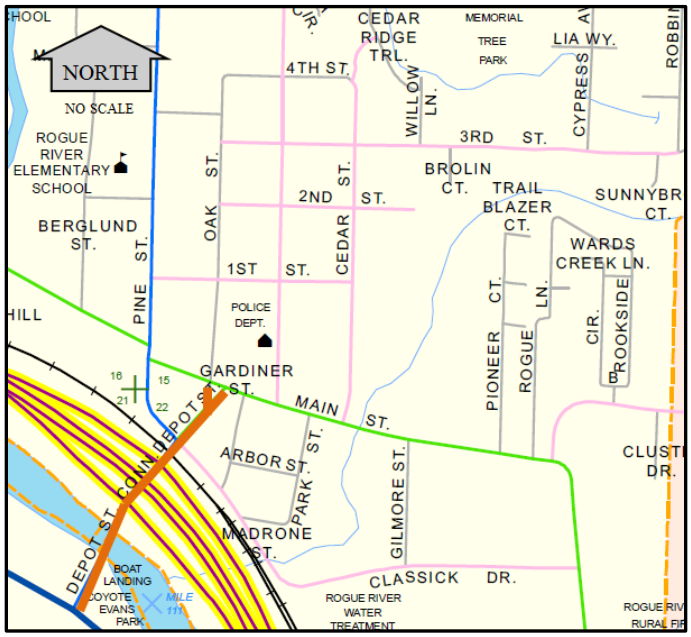
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $66,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer. Consider combining with B5 when replacing striping.

Improvement Project PV2: Depot Street Resurfacing

Vicinity Map



Description: Resurface alligator cracking. This includes crack seal and seal coat.

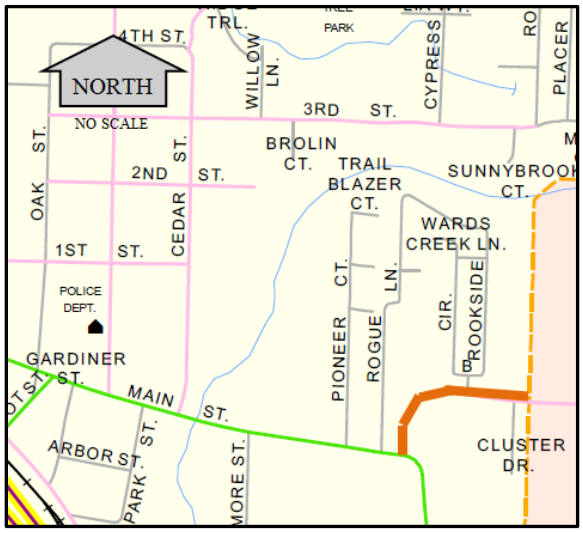
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $27,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer.

Improvement Project PV3: Wards Creek Road Resurfacing

Vicinity Map



Description: Resurface alligator cracking. This includes crack seal in lower section and seal coat upper section.

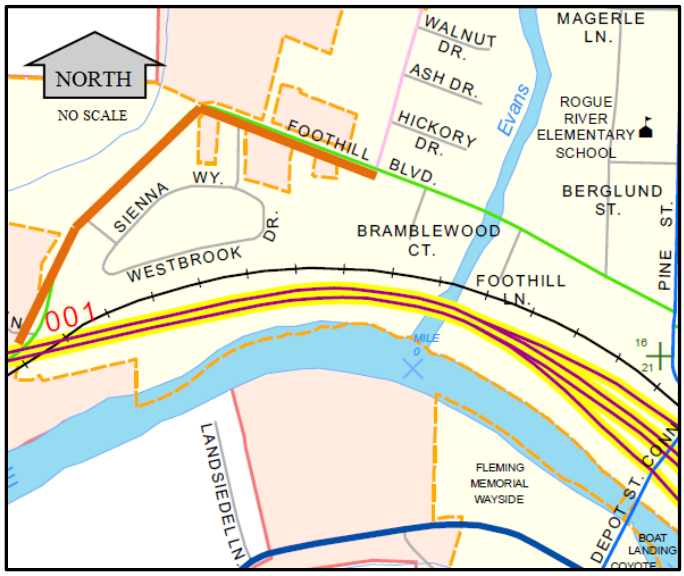
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $90,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer.

Project PV4: Foothill Boulevard Resurfacing

Vicinity Map



Description: Resurface minor cracking. This includes crack seal.

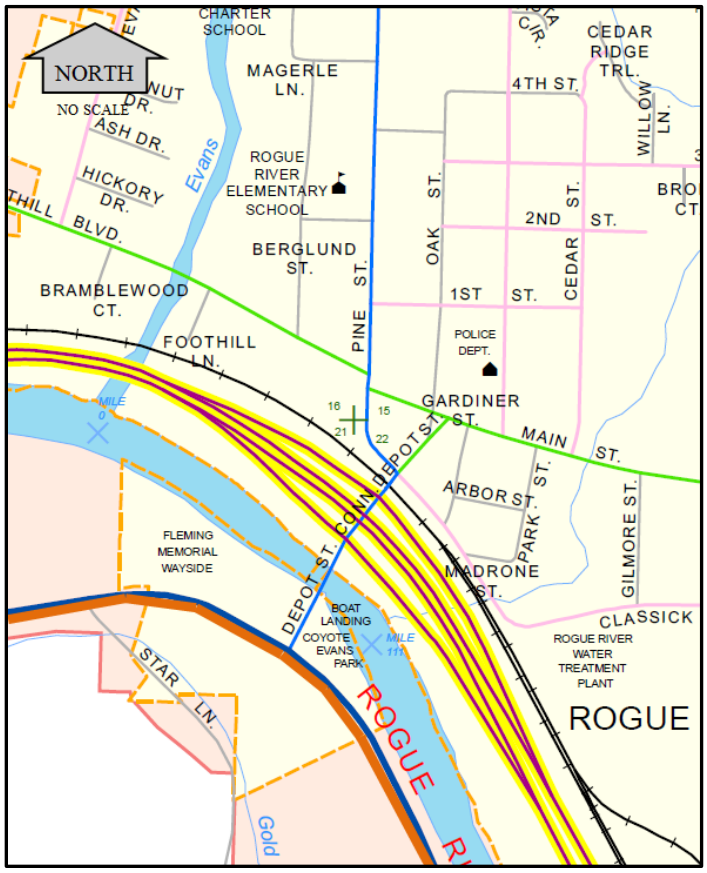
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $36,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer.

Improvement Project PV5: OR99 Overlay

Vicinity Map



Description: Resurface with an overlay for 5500 feet.

Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $1,330,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer. Consider combining with OS2 and P9 to minimize costs.

Summary

There are a number of alternatives to address the deficiencies within the city. These alternatives create a positive outlook that Rogue River can address the needs of their citizens as the city grows. Substantial improvements will occur as funding is created for pedestrian, bicycle and transit modes to help ensure future livability.

Next Steps

The next steps will finalize alternatives from comments by the PAC and the public in the next series of meetings. Alternatives will be evaluated by TSP goals and objectives and other measures of effectiveness. Alternatives will be ranked and a preferred alternative chosen. All alternatives will be on an overall project list to assist RVCOG in determining a constrained project list after a complete funding forecast. Individual project sheets (based on this section) will be created for each project and incorporated within the draft TSP document.

Section 8 – TSP Evaluation

TSP Evaluation Objectives

This evaluation needs to compare and contrast alternatives and options using evaluation criteria based on TSP objectives. The given TSP objectives were:

- Provide for a safe and efficient transportation system based on the existing and future land uses
- Prioritize improvement projects for existing transportation facilities
- Create a project list for soliciting funding through the Middle Rogue Metropolitan Planning Organization
- Establish a document that is simple and easy to understand for developers and the community
- Include a safe routes to school component that provides a plan to construct missing portions of bicycle and pedestrian infrastructure
- Comply with applicable state and local laws, rules, and regulations

From the above, only the first objective is standard as it is related to safety and congestion, but it is very broad. The rest of them are process-based. The typical TSP has a much longer objective list considering a wide range of different items (environment, accessibility, freight needs, etc.), so an expanded list was created and was reviewed by the participants in the July 2018 TSP Project Advisory Committee (PAC) meeting. After comments were addressed, the expanded TSP evaluation objectives are shown in Table 1.

Table 1: Expanded TSP Evaluation Objectives

Objective	Description
Potential Environmental Impacts	Impacts to slopes, wetlands, riparian areas
Funding Likelihood	Based on total cost ranges, multiple funding sources (leverage potential) , and ability to break into multiple phases
Constructability	Based on potential right-of-way needs, grade issues, and structure needs
Improves Connectivity	Based on the ability to reduce out-of-direction travel or travel distance

Improves Access to Destinations	Based on general accessibility and improving connections between housing and employment areas, schools and major community destinations
Improves Congestion	Impacts to v/c ratio, delay and/or queuing
Improves Safety	Based on potential crash reduction, increased pedestrian/bicyclist comfort, lower bike stress, greater separation, etc.
Freight Access	Impacts to freight movements, access to I-5 and industrial areas
Parking Impacts	Based on a net increase or decrease in parking spots
Safe Routes to School Compatibility	Based on how well an option improves connectivity and safety to/from schools
Compatibility with Neighborhood Context	Based on how well an option "fits" with the surrounding existing and future land uses
Consistency with the Oregon Highway Plan (OHP) Goals	Based on how well an option supports the OHP Goals of System Definition, System Management, Access Management, Travel Alternatives, and Environmental and Scenic Resources.

Weighting and Scoring

All criteria are assumed to have equal weight in this analysis versus having measures with varying levels of importance. A scoring system needs to be simple enough to administer but also show enough potential change between the alternatives and options in order to screen or rank them. The following scoring system that was used for the Rogue River TSP is shown in Table 2.

Table 2: Scoring System

Points	Description
+2	Significant positive impact
+1	Slight positive impact
0	Neutral, no change, or not applicable
-1	Slight negative impact
-2	Significant negative impact

Evaluation Criteria

Any specific evaluation criterion from an objective needs to be measurable either on a qualitative or quantitative basis from available data or information. The evaluation criteria are compared against a given alternative or option in order to score and rank it. The objectives and their related criteria were finalized before any ranking started to avoid accidentally creating biases. Tables 3 through 14 show the evaluation criteria that go along with each of the proposed objectives and scoring thresholds.

Table 3: Potential Environmental Impacts - Qualitative

General assessment of impacts to cross-slopes, creek/river banks, floodways, and undisturbed lands	
0	Neutral, no change, or not applicable
-1	Slight negative impact
-2	Significant negative impact

Table 4: Funding Likelihood – Qualitative & Quantitative[1]

Improvement cost ranges: From most likely fundable to least likely fundable	
2	<$100,000
1	$100,000 - $500,000
0	$500,000 - $2,000,000
-1	$2,000,000 - $10,000,000
-2	> $10,000,000
Funding sources = Assessment of the probability of having multiple funding sources to split costs (i.e. private developers, SRTS funds, etc.).	
0	No additional sources
1	One additional source
2	Two or more additional sources
Phaseability (Ability to break up project into multiple pieces)	
2	Improvement can be broken into more than two phases
1	Improvement can be broken into two phases
0	Improvement is not phaseable

[1]Each element has one-third (~33%) of the total score

Table 5: Constructability – Qualitative[1]

Right-of-way needs	
0	No extra right-of-way needed
-1	Possible right-of-way needed
-2	Possible right-of-way needed including potential displacements
Roadway grade impacts	
0	No grade impacts
1	Slight grades
2	Moderate to steep grades
Potential structure needs	
2	No structures needed/affected
1	Structure improvements needed/retaining walls possible
0	New structures with substantial length, width or height

[1]Each element has one-third (~33%) of the total score

Table 6: Improves Connectivity - Qualitative

General assessment of connectivity improvements for the applicable affected modes	
0	Neutral, no change, or not applicable
1	Fills a gap
2	Reduces out-of-direction travel or total travel distance

Table 7: Improves Access to Destinations – Qualitative[1]

General assessment on ability of project to improve accessibility between residential and community destinations	
2	Significant positive impact
1	Slight positive impact
0	Neutral or not applicable
-1	Slight negative impact
-2	Significant negative impact

[1]Each of the following elements have 20% of the final score: commercial areas (i.e. downtown, East Main St), industrial areas, schools, parks, and areas outside the city.

Table 8: Improves Congestion – Qualitative & Quantitative[1]

Change in volume-to-capacity ratio[2] compared to 2040 future no-build conditions Applicable only to OS and some C-class projects[3]	
2	> -0.10 change
1	From -0.03 to -0.10 change
0	Within -0.02 to 0.02 change or not applicable
-1	From 0.03 to 0.10 change
-2	> 0.10 change
Change in 95th percentile queues compared to 2040 future conditions averaged across all approaches Applicable only to OS and some C-class projects[3]	
2	> -10 vehicles (~250')
1	- 3 vehicles (~75') to -9 vehicles (~225')
0	+/- 2 vehicles (~50') or not applicable
-1	+ 3 vehicles (~75') to +9 vehicles (~225')
-2	> +10 vehicles (~250')
General assessment of the ability of the project to improve congestion (applicable only to C-class projects not in the above) OR General assessment of the potential to affect mode share (applicable to other project classes)	
2	Significant positive impact
1	Slight positive impact
0	Neutral or not applicable
-1	Slight negative impact
-2	Significant negative impact

[1]Measures dependent on project class to avoid double-counting impacts
[2]Uses either the intersection v/c ratio for signalized intersections or highest approach for unsignalized intersections
[3]The quantitative v/c and queuing elements each have 50% of the total score.

Table 9: Improves Safety – Qualitative & Quantitative

Highest crash reduction factors (CRF) Applicable only to OS-class projects	
2	CRF > 0.40
1	CRF between 0.10 and 0.40
0	CRF < 0.10 or not available/applicable
Improvements in Bicycle Level of Traffic Stress or pedestrian qualitative rating Applicable only to B & P-class projects	
2	Change of 2 or more LTS or pedestrian rating levels
1	Change of 1 LTS or pedestrian rating level
0	No change in LTS or pedestrian rating
General assessment of ability of project to improve safety for users Applicable only for T, C, BR & PV-class projects	
2	Significant ability
1	Slight ability
0	Neutral or not applicable

Table 10: Freight Access – Qualitative

General assessment of project impacts to freight movements, access to I5, and access to commercial and industrial uses	
2	Improves access, shortens travel distance to and from
1	Enhances access, shortens travel distance to or from
0	Maintains access/no impact/not applicable
-1	Restricts access, creates out-of-direction travel to or from
-2	Limits access, creates significant out-of-direction travel to and from

Table 11: Parking Impacts – Quantitative

Net increase or decrease in parking spaces	
2	Adds 10+ parking spaces
1	Adds <10 parking spaces
0	No change/not applicable
-1	Removes <10 parking spaces
-2	Removes 10+ parking spaces

Table 12: Safe Routes to Schools Compatibility – Quantitative

General assessment of bicycle and/or pedestrian separation from motor vehicles	
2	>10 feet separation
1	>2 to 10 feet separation
0	2 feet separation /not applicable
-1	No separation (less than 2 feet)
-2	No separate facility

Table 13: Compatibility with Neighborhood Context – Qualitative

General assessment of how project is consistent with neighborhood "feel" for today and into the future; does it change the character of the neighborhood or the ability to function as a cohesive unit?	
2	Enhances neighborhood
1	Improves neighborhood
0	No change; consistent with context
-1	Affects neighborhood
-2	Impacts neighborhood

Table 14: Consistency with OHP Goals – Qualitative[1]

General Assessment of how project is consistent with the five OHP goals: Goal 1: System Definition[2], Goal 2: System Management[3], Goal 3: Access Management[4], Goal 4: Travel Alternatives[5], and Goal 5: Environmental and Scenic Resources[6]	
2	Consistent with OHP Goals
1	Somewhat consistent with OHP Goals
0	Neutral
-1	Somewhat inconsistent with OHP Goals
-2	Inconsistent with OHP Goals

[1]Each goal is 20% of the final score
[2]Goal 1 – uses the average of the score from the Improves Congestion and Improves Safety criteria
[3]Goal 2 – uses the average of the scores of the Improves Connectivity, Improves Access to Destinations, Improves Safety, Safe Routes to Schools Compatibility, and the funding sources sub-criteria
[4]Goal 3 – uses the average of the score of the Improves Connectivity and Freight Access criteria
[5]Goal 4– uses the average of the Freight Access, Improves Access to Destinations , and the Improves Congestion potential to change mode share component (applied to all project types) criteria
[6]Goal 5 – uses the average of the scores of the Potential Environmental Impacts, Constructability, and the Compatibility with Neighborhood Context

Preferred Projects

The alternatives and related options were scored based on the scoring criteria above. Where multiple options existed for a single alternative, only the highest scoring option was passed. The higher the score, the more consistent the alternative is with the overall objectives. The full scoring matrix is shown in Appendix A. Appendix B has all of the projects ranked by score to help facilitate the development of the financially constrained project list. Appendix C shows a table of the dismissed options. Tables 15, 17-19, and 21-23 show each project category with the projects ranked by overall score. Detailed project descriptions follow each summary table in numeric order.

The final cost estimates in this memorandum include general cost allowances for project contingencies, preliminary engineering, construction engineering, mobilization and temporary traffic control. The cost estimates do not include: right-of-way, permitting, drainage improvements, water quality, surface grinding/other surface preparations beyond what is listed, or any environmental mitigation. Many of these are unknowns at this time.

As part of the funding element of the TSP, funding policies shall consider and include among the priorities, facilities and improvements that support mixed-use, pedestrian friendly development and increased use of alternative modes. These funding mechanisms may also be described in terms of general guidelines or local policies.

For all improvement projects on State facilities, inclusion of an improvement in this plan does not represent a commitment by ODOT to fund, allow, or construct the project. Projects on the State Highway System that are contained in this document are not considered "planned" projects until they are programmed into the Statewide Transportation Improvement Program (STIP). As such, projects proposed that are located on a State Highway cannot be considered mitigated for future development or land use actions until they are programmed into an adopted STIP or ODOT provides a letter

indicating that the project is "reasonably likely". Highway projects that are programmed to be constructed may have to be altered or cancelled at a later time to meet changing budgets or unanticipated conditions such as environmental constraints.

Pedestrian Projects

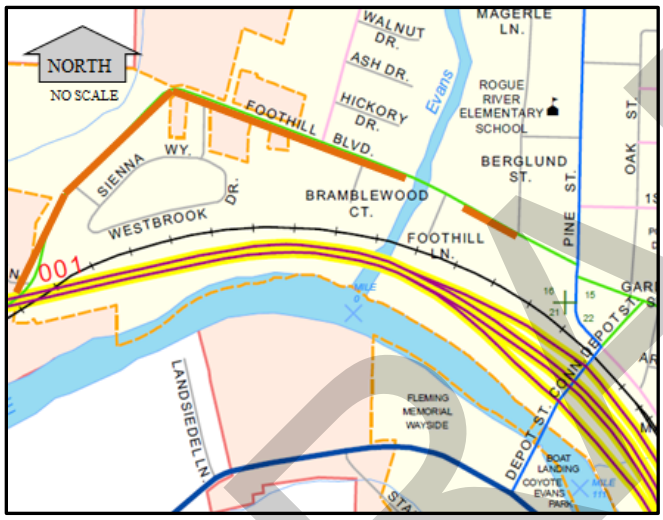
Table 15: Pedestrian Projects

Project #	Description	Agency	Cost	Score
P1-B	West Main St/Foothills Blvd: Add 10' sidepath	City	$378,000	12.8
P12-M	West Evans Creek Rd (N of Palmerton Park): Add 10' sidepath	City/SRTS	$240,000	12.5
P12-E	Oak St : Add sidewalks	City/SRTS	$456,000	12.2
P12-B	1st St (Broadway – Cedar): Add sidewalks	City/SRTS	$166,000	12.0
P7-C	North River Rd: Add crosswalk & pedestrian refuge island	City	$289,000	11.7
P12-I	Gardiner St: Add sidewalks	City/SRTS	$243,000	11.7
P12-D	Berglund St: Add sidewalks	City/SRTS	$332,000	11.6
P4-6-A	Broadway, Pine, & East Main St: Add marked crosswalks	City	$108,000	11.4
P8-B	Classick Dr: Add 10' sidepath	City	$352,000	11.4
P12-A	West Evans Creek Rd (S of Palmerton Park): Add sidewalks	City/SRTS	$624,000	11.3
P10-B	Pine & Depot St: Add crosswalk markings	City	$105,000	11.3
P12-F	Cedar St: Add sidewalks	City/SRTS	$629,000	10.6
P7-B	North River Rd: Add street lighting	City	$122,000	10.6
P3-B	East Evans Creek Rd: Add 10' sidepath	City	$768,000	10.6
P7-D	North River Rd: Add 6' sidewalk/10' sidepath combination	City	$667,000	10.5
P12-C	2nd St (Cedar – Wards Creek): Add sidewalks	City/SRTS	$80,000	10.5
P12-H	Park St: Add sidewalks	City/SRTS	$370,000	10.4
P12-J	4th St (off of Berglund St); Add sidewalks	City/SRTS	$173,000	10.2
P12-G	Robbins Ave: Add sidewalks	City/SRTS	$153,000	9.8
P2-B	East Main St (Wards Creek Rd to North River Rd) : Add 10'sidepath	City	$27,000	9.8
P11-B	Wards Creek Rd (East Main St to City Limits) : Add 10' sidepath	City	$96,000	9.6
P13-A	OR99: Add 6' sidewalks	City/ODOT	$675,000	9.6
P9-B	3rd St: Add 10' sidepath	City	$384,000	9.4
P8-C	Classick Dr: Add street lighting	City	$67,000	9.3
P10-A	Pine St (Depot – Main St): Add 6' sidewalks	City	$130,000	8.5
P9-C	3rd St: Add street lighting	City	$24,000	8.3

P1 West Main Street/Foothill Boulevard

Deficiency: West Main Street has sidewalk to the west of Pine Street for a block (not by football field) and a striped walking path on the north side road shoulder extending to East Evans Creek Road. The roadway also has paved shoulders that could be used as bicycle facilities, although it is too narrow. The road cross section and shoulder space narrows on Foothill Boulevard, west of West Evans Creek Road as it approaches the Urban Growth Boundary. Improvements should be continued west on Foothill Blvd to the city limits. This section of roadway has a posted speed of 25-45 mph. The 2040 ADT for this street is projected to be 6500 near the school, but 1700 on Foothill Boulevard.

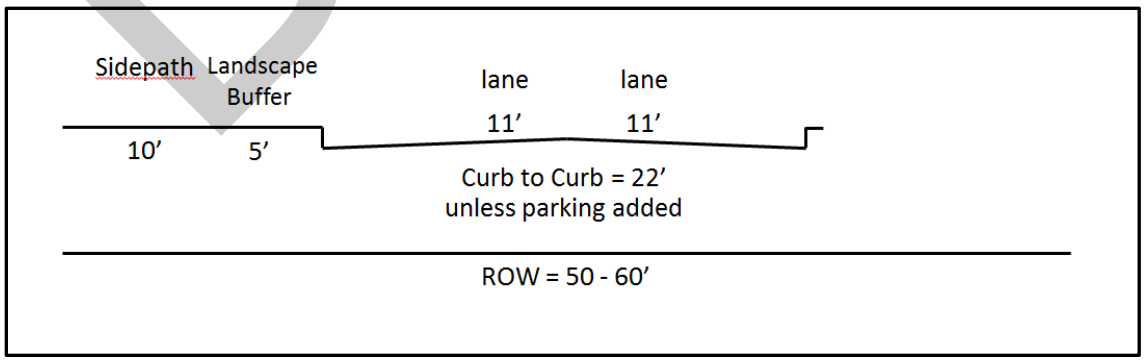
Vicinity Map



Improvement Option A: Create 10' sidepath

Description: A 10' sidepath would be built from Pine Street to the city limits along West Main Street and Foothill Boulevard.

Roadway Cross-section



Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. The bicycle LTS rating significantly improves from LTS 3 to LTS 1. This leaves open space from curb to curb, possibly for parking. This improves this street from poor to very good.

Preliminary Cost Estimate: $378,000

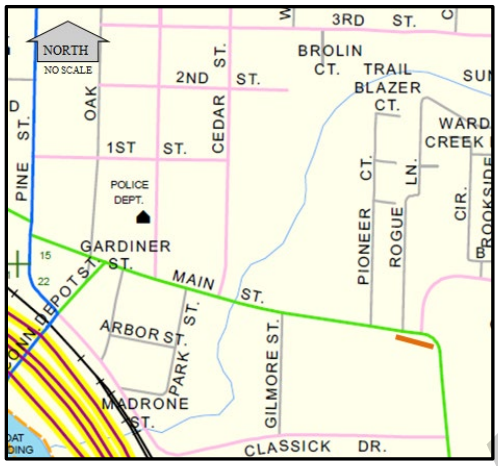
Key Considerations/Impacts: If origin and destination of a walking trip both exist opposite of the path, then extra crossings will expose pedestrians to vehicle traffic. Buffer types and widths need to be considered where the path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Notes: This is in the same location as Project B3-C and is duplicated by it. Project B3-C was dismissed as it was lower rated (See Appendix C).

P2 East Main Street

Deficiency: East Main Street needs sidewalk facilities on the south side from Rogue Lane to N River Road. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 9800.

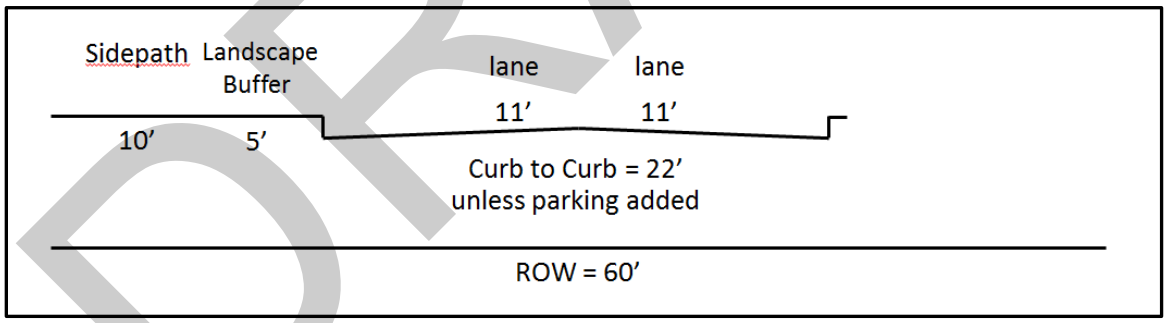
Vicinity Map



Improvement Option A: Create 10' sidepath

Description: A ten foot sidepath would be built for 170 feet.

Roadway Cross-section



Benefits: Providing a sidepath should help pedestrians traveling on this street or going to the post office. Pedestrians will have a safe space to walk away from traffic. A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This improves this street from poor to very good.

Preliminary Cost Estimate: $27,000

Key Considerations/Impacts: Pedestrians and bicyclists would be safer traveling on a sidepath. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

P3 Pine Street/E Evans

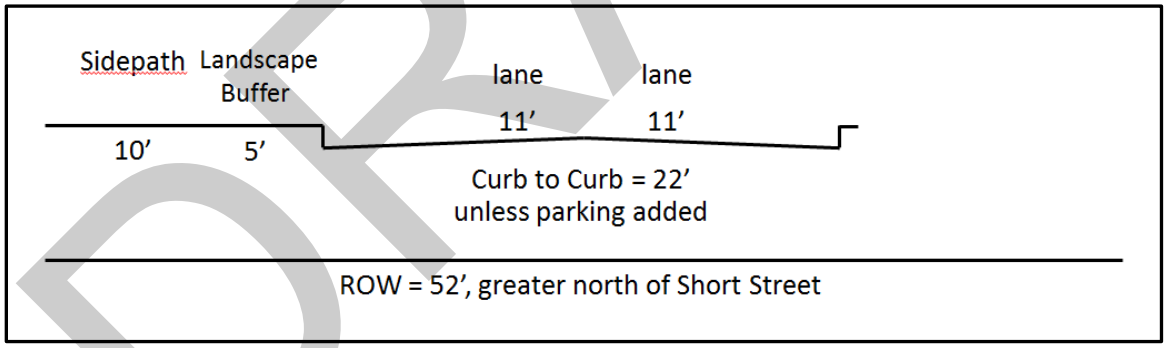
Deficiency: From 300 feet north of Short Street, sidewalk only exists on the west side of Pine Street to Creek View Lane. From Creek View Lane north, there are no sidewalk facilities on Pine Street/ East Evans Creek Road to access the junior/senior high school. This section of roadway has a posted speed of 25-45 mph, even in the school zone. The 2040 ADT for this street is projected to be 3500.

Vicinity Map

Improvement Option A: Create 10' sidepath

Description: A ten foot sidepath would be built from beginning of roadway north to the junior/senior high school.

Roadway Cross-section



Benefits: Providing a sidepath should help pedestrians traveling on this street or going to the junior/senior high school. Pedestrians will have a safe space to walk away from traffic. A sidepath and buffer would give a comfortable separated space for bicyclists and pedestrians especially in the higher speed sections, maximizing use. The bicycle LTS rating significantly improves from LT4 to LTS 1. On the Pine Street section the sidewalks were rated fair, further up on East Evans Creek Road the pedestrian facilities were rated very poor. This option would bring the pedestrian facilities up to very good.

Preliminary Cost Estimate: $768,000

Key Considerations/Impacts: In some areas this option may require retaining walls. Pedestrians and bicyclists would be safer traveling on a sidepath. The east side is chosen

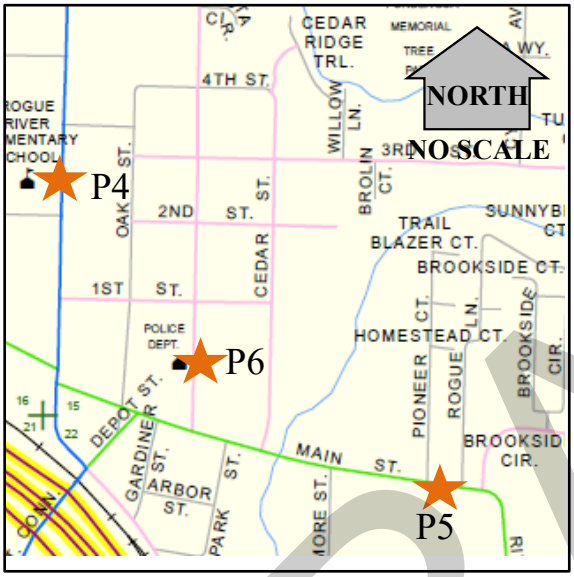
as it will not interfere with utility poles and have fewer slope issues. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Notes: Project B2-C was also selected as the choice for the bicycle mode which duplicates this project as they are both sidepath options. This project is rated slightly higher and is estimated to be slightly less in cost, so Project B2-C was dismissed.

P4-6 Marked Crosswalks

Deficiency: Drivers are not observing and properly yielding to pedestrians at marked crosswalks. Frequently, stops are not happening near the elementary school (P4 Pine Street), with a 2040 ADT of 8000; at Main Street/N River Road (P5 near shopping area), with a 2040 ADT of 9800; and at Broadway (P6 near 1st Street), with a 2040 ADT of 3000. These roadways have a posted speed of 25 mph, with the exception of the school zone.

Vicinity Map



Improvement Option A: Install continental crosswalks and signing

Description: Continental crosswalks and related signing would be added to all three locations.

Benefits: The continental crosswalk is more visually recognized from vehicle drivers, so expectation for pedestrians is increased making yielding more likely. The crosswalks and

signing will improve pedestrian safety. This option is rated good for pedestrians. A continental crosswalk has a Crash Reduction Factor (CRF) of 0.15.

Preliminary Cost Estimate: $108,000 ($36,000 for each site)

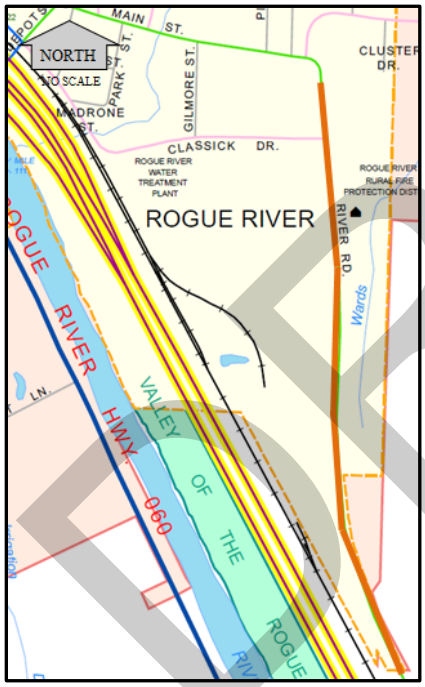
Key Considerations/Impacts: This will make the crossing locations more obvious to drivers so that they will yield to pedestrians when needed.

P7 North River Road

Deficiency: North River Road has a sidewalk on the east side from Wards Creek Road to a bit past Classick Drive. There is curbing for much of this distance on the west side, but no sidewalk. This section has a wide paved shoulder that could be used for bicycle facilities instead of unnecessary parking. There is also a lack of lighting, especially for crosswalks. Note that there is a lack of ADA ramps, including at crosswalks. There is an attraction, Mountain of the Rogue Mt Bike trailhead just outside of the UGB. It would be good to work with the county to connect the Mountain of the Rogue Mountain Bike trail and invite those that use this recreational facility to come into town on a bicycle.

This section of roadway has a posted speed of 25-45 mph. The 2040 ADT for this street is projected to be 3500, and 3100 south of Classick Drive. North River Road from East Main Street and south of Classick Drive could use bicycle lanes given the auto speed limit in this LTS 3 section instead of a wider paved shoulder that allows for unnecessary parking.

Vicinity Map



Improvement Option A: Add street lighting

Description: Install street lighting from East Main Street to the UGB, illuminating pedestrians, bicyclists, and vehicles turning in and out of driveways.

Benefits: This will help all modes to be more visual to each other at night, improving safety. This will give urban-area type clues to drivers, which will have them more likely to expect bicyclists and pedestrians as well as turning vehicles. This should slow some vehicles that don't realize they are coming into town. This option is rated very good for

pedestrians. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

Preliminary Cost Estimate: $122,000

Key Considerations/Impacts: Utility lines on the west side of the street should be considered.

Improvement Option B: Improve pedestrian crossings

Description: Install pedestrian refuge islands, advance signing, pedestrian activated beacons ADA-standard ramps will also be installed. This option is rated very good for pedestrians.

Benefits: The activated beacons and refuge combination gives maximum visibility for higher traffic locations, increasing yielding rate. A refuge island shortens crossing distance and allows for crossing one direction at a time. ADA-ramps allow crossings to be accessible for all users. This option is rated very good for pedestrians. A pedestrian refuge has a Crash Reduction Factor (CRF) of 0.31. A pedestrian Beacon has a CRF of 0.55. Crosswalks and advance warning signs have a CRF of 0.37.

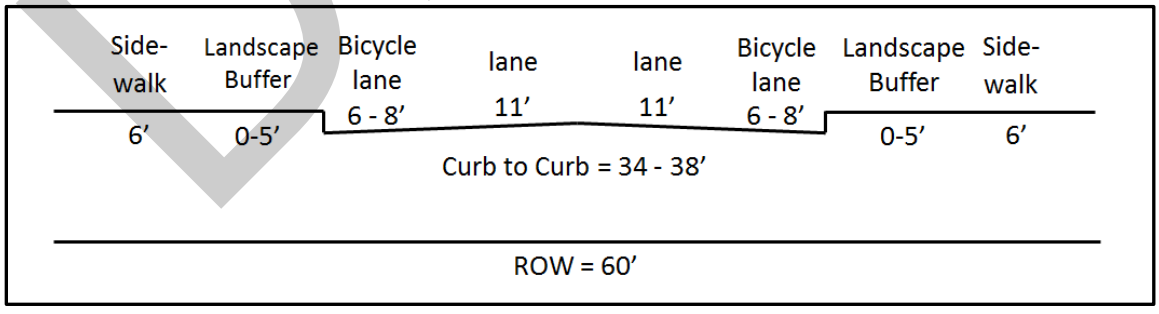
Preliminary Cost Estimate: $289,000

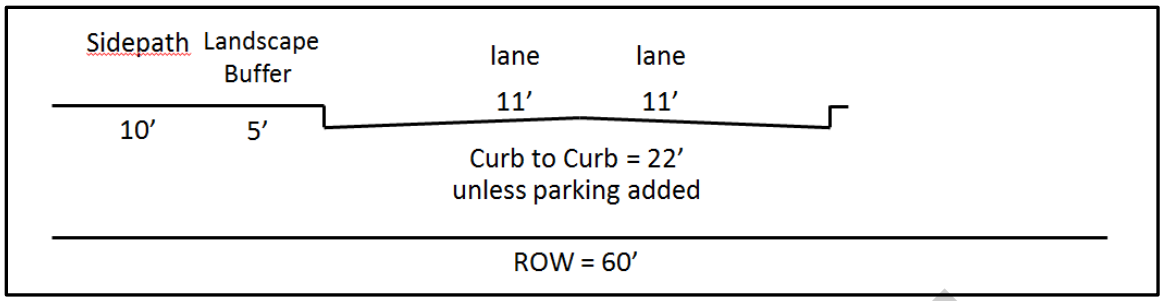
Key Considerations/Impacts: Vehicular traffic traveling into town will be more likely to see signing or a beacon. Pedestrians crossing the street would be much safer with one of these improvements.

Improvement Option C: Create sidewalk and sidepath

Description: A six foot sidewalk would be built on the west side of North River Road from East Main Street to Classick Drive. The paved shoulders would be converted to bicycle lanes north of Classick Drive. A ten foot sidepath would be built from Classick Drive to the city limits which would address the needs of both pedestrians and bicyclists.

Roadway Cross-sections





Benefits: A sidewalk and sidepath would give a comfortable separated space for bicyclists and pedestrians which will maximize use. The sidewalk and the sidepath fit the environment they are placed in. This option is rated very good for pedestrians. The LTS rating remains at LTS 3 for the paved shoulder section and improves to LTS 1 in the sidepath section.

Preliminary Cost Estimate: $667,000

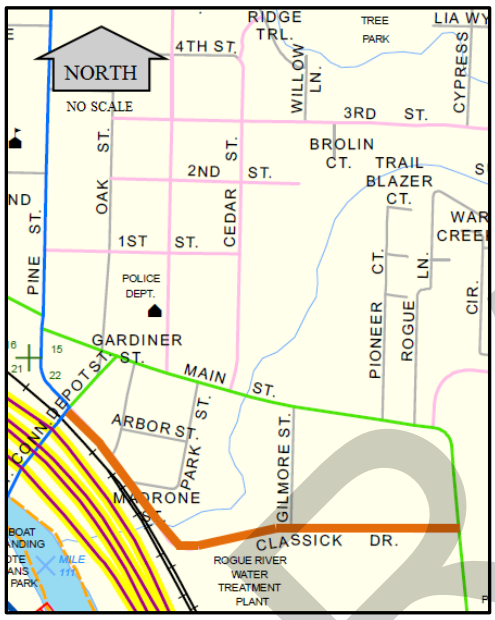
Key Considerations/Impacts: The major impact would be no street parking allowed on this segment, however, most of the uses have off-street parking locations which will minimize the loss. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Attention should be paid to avoid interference with utility poles. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Notes: Project B7 was combined into this project as the selected improvement option (buffered bicycle lane) conflicted with the sidepath option in this project, but also had a much higher cost and lower overall evaluation score. The UGB/city limits are 2000 feet north of the entrance to the Mountain of the Rogue trailhead, so there will be a facility gap unless Jackson County fills this in. Sidewalk does not currently exist that is shown on the roadway cross sections.

P8 Classick Drive

Deficiency: Classick Drive was originally built by the mill as a truck route. Therefore, it lacks sidewalks and lighting on much of it. Some sections have businesses, such as a coffee shop or US Post Office that would attract pedestrians. Some sections of Classick Drive have parking for large trucks. This truck parking area should be defined and planned with alternate paths where it is desired to have the sidewalk closed. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be between 2300 and 800.

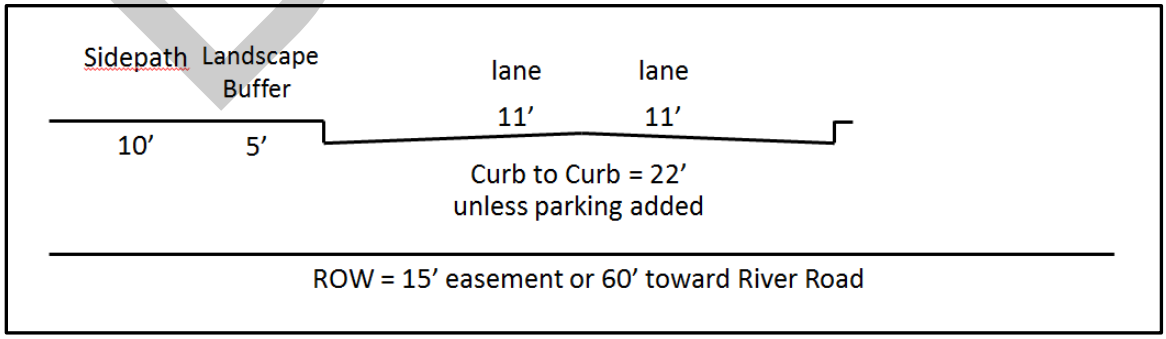
Vicinity Map



Improvement Option A: Create 10' sidepath

Description: A ten foot sidepath would be built on the north side of Classick Drive from Pine Street to North River Road.

Roadway Cross-section



Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. The truck parking could continue to exist on the south side of the street. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $352,000

Key Considerations/Impacts: Right-of-way is a 15 foot easement from Depot Street to Gilmore Street. Attention should be paid to avoid interference with utility poles. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Improvement Option B: Add street lighting

Description: Install street lighting from Pine Street to North River Road, illuminating all modes

Benefits: This will help all modes to be more visual to each other at night which will improve safety. This will give urban-area type clues to drivers, which will have them more likely to expect bicyclists and pedestrians as well as turning vehicles. This should slow some vehicles that don't realize they are coming into town. This option would improve the pedestrian facilities to very good. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

Preliminary Cost Estimate: $67,000

Key Considerations/Impacts:

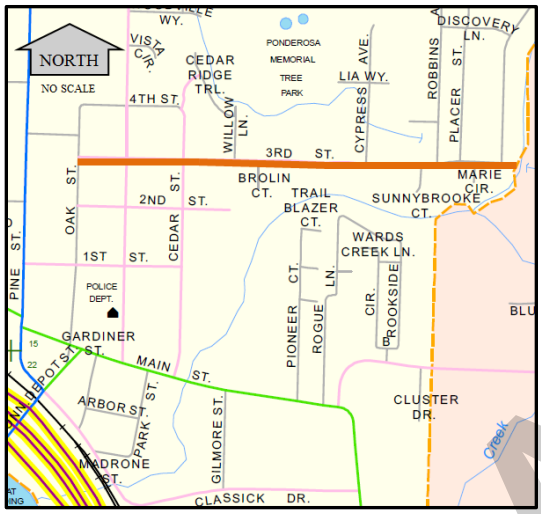
Considerations/Impacts: Utility lines should be investigated. This option may be less relevant if Classick Drive is restricted at the Pine/Depot Street intersection. Bicyclist needs are still not met.

Notes: Classick Drive also involves Project BR2-B which is a parallel bicycle/pedestrian bridge which would match well with the P8-B project above.

P9 3rd Street

Deficiency: There should be sidewalks on both sides of 3rd Street. Striped paths lack a raised curb and any physical or lateral separation from traffic. Garbage carts block the path, rather than in driveways. This section of roadway has a posted speed of 25 mph.

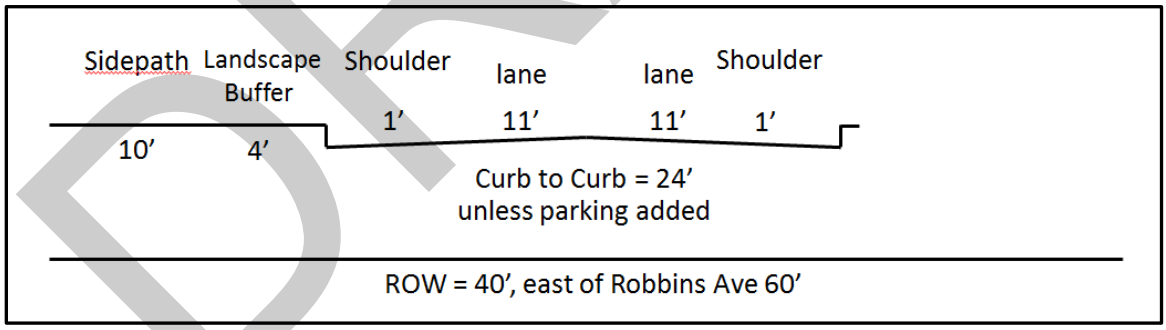
Vicinity Map



Improvement Option A: Create 10' sidepath

Description: A ten foot sidepath would be built for the entire length of 3rd Street.

Roadway Cross-section



Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $384,000

Key Considerations/Impacts: To avoid right-of-way purchase, the current street alignment may need to be adjusted. In some areas this may also require retaining walls. If a pedestrians origin and destination both exist on the opposite side of the path, then extra crossings will be required. Buffer types and widths need to be considered where the

path crosses private accesses. Pedestrians and bicyclists would be safer traveling on a sidepath. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Improvement Option B: Add street lighting

Description: Install street lighting from Cedar Street to Oak Street, illuminating pedestrians, bicyclists, and vehicles turning in and out of driveways.

Benefits: This will help all modes to be more visual to each other at night, improving safety. This option would improve the pedestrian facilities to very good. Adding street lighting has a Crash Reduction Factor (CRF) of 0.28 for a street and 0.38 for an intersection.

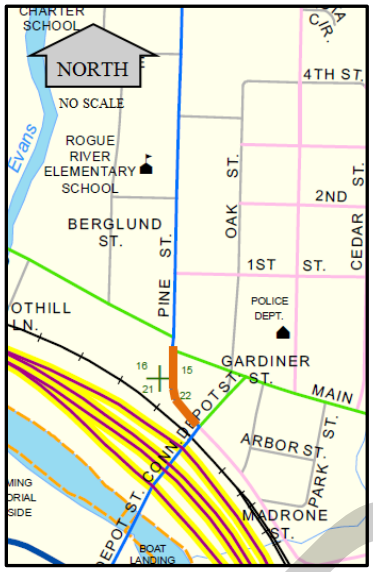
Preliminary Cost Estimate: $24,000

Key Considerations/Impacts: Existing utility poles should be considered for locations.

P10 Pine Street Downtown

Deficiency: There are no sidewalks on the north side of Pine Street from Depot Street to East Main Street and south side for a portion of that distance. This leads up to the intersection of Pine Street and Depot Street that needs crosswalks on the stopped legs, not to include the leg that crosses the railroad tracks. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 8200.

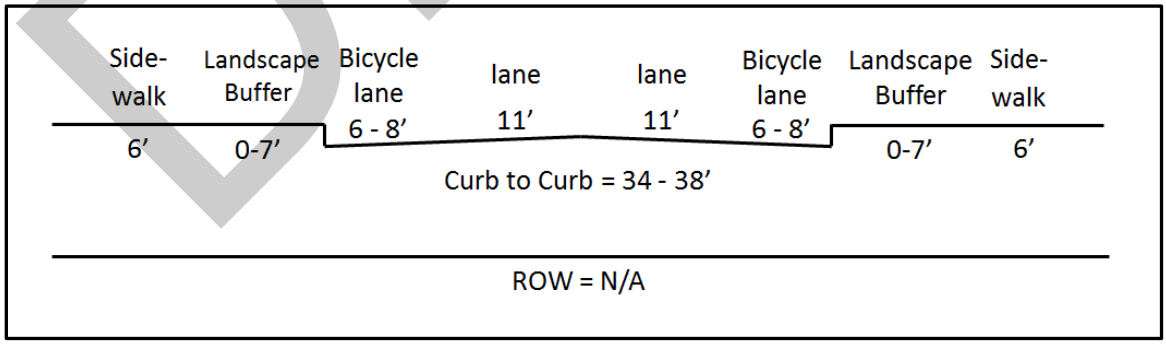
Vicinity Map



Improvement Option A: Build six foot sidewalks

Description: Six foot sidewalks would be built from Depot Street to East Main Street on both sides of Pine Street.

Roadway Cross-section



Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety with separation from vehicular traffic. This will also define driveway locations for businesses, improving safety. This option would provide needed pedestrian facilities, but would remain at fair.

Preliminary Cost Estimate: $130,000

Key Considerations/Impacts: Right-of-way may be a consideration, requiring property impacts. Bicyclist needs are still not met.

Improvement Option B: Install crosswalks at Pine/Depot Street

Description: Install crosswalk markings on the Depot St and Classick legs of the Pine/Depot/Classick intersection.

Benefits: This should help pedestrians crossing this intersection by marking a crosswalk that is visible to drivers, increasing yielding rate. This option would improve the pedestrian facilities from fair to good. A crosswalk has a Crash Reduction Factor (CRF) of 0.37.

Preliminary Cost Estimate: $70,000

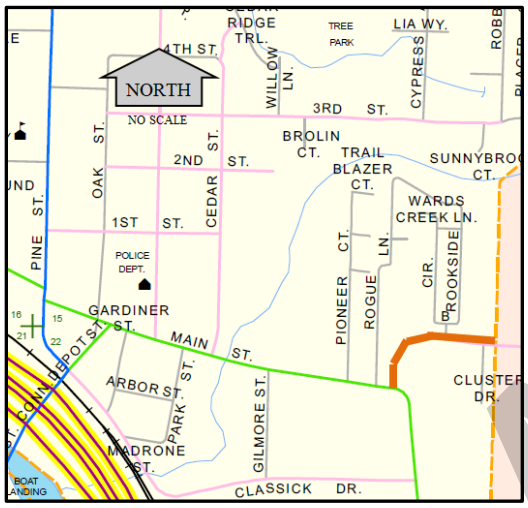
Key Considerations/Impacts: Continental Crosswalks are recommended for installation at mid-block locations. This will not detract from vehicular needs, but make the crossing locations more obvious to drivers. This option will need to be modified for crossing distance or number of stopped approaches if the intersection is modified as in Project OS4.

Notes: This project is at the same location as Project OS4-F. This project has been modified to be fully compatible by allowing crosswalks only on the north and east legs of the intersection as the west and south legs are essentially free-flow.

P11 Wards Creek Road

Deficiency: Wider shoulders are an improvement; there needs to be sidewalks around the mall area to the city limits. There should be sidewalks from the mall to the assisted living area and mobile homes. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 1300.

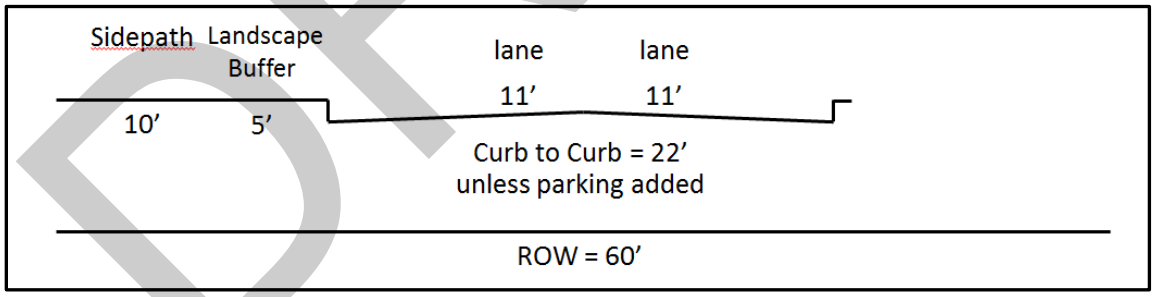
Vicinity Map



Improvement Option A: Create 10' sidepath

Description: A ten foot sidepath would be built from East Main Street to the city limits.

Roadway Cross-section



Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than Option A. This option would improve the pedestrian facilities to very good.

Preliminary Cost Estimate: $96,000

Key Considerations/Impacts: If the origin and destination of the trip both exist on the opposite of the path, then extra crossings will expose pedestrians to vehicle traffic. Buffer types and widths need to be considered where the path crosses private accesses. With eleven foot travel lanes there will not be any detrimental effects to the vehicular

traffic. Pedestrians and bicyclists would be safer traveling on a sidepath. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

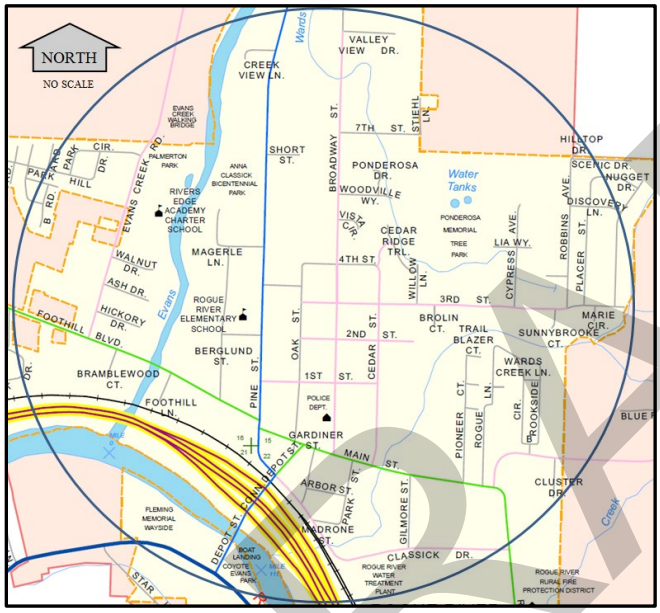
Notes: Grade should be a consideration. A rest point midway up the hill for wheelchairs and elderly could be considered.

Safe Routes To School (Project P12)

Project P12 was created to cover beyond the Pedestrian or Bicycle sections. As noted in Technical Memorandum #6 and shown in the vicinity map, Safe Routes to Schools (SRTS) area covers generally the entire city.

Deficiency: Priority should be given to providing sidewalks, or equivalent, within a ½ mile walk to the combined junior/senior high or elementary school, not covered in other projects. Suggestion lists of locations are below each option. Everything inside the circle on the vicinity map is generally within a ½ mile of the elementary school.

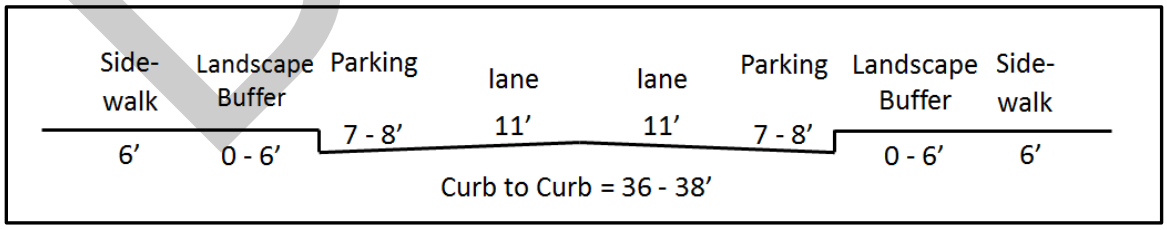
Vicinity Map



Improvement Sidewalk Option: Build six foot sidewalks.

Description: The sidewalks would be built as shown in Table 16 below.

Roadway Cross-section Example



Benefits: Sidewalks provide a designated place for pedestrians, improving comfort and safety. This will create non-automobile connections to schools.

Table 16: Sidewalk project location listing (P12-A to J)

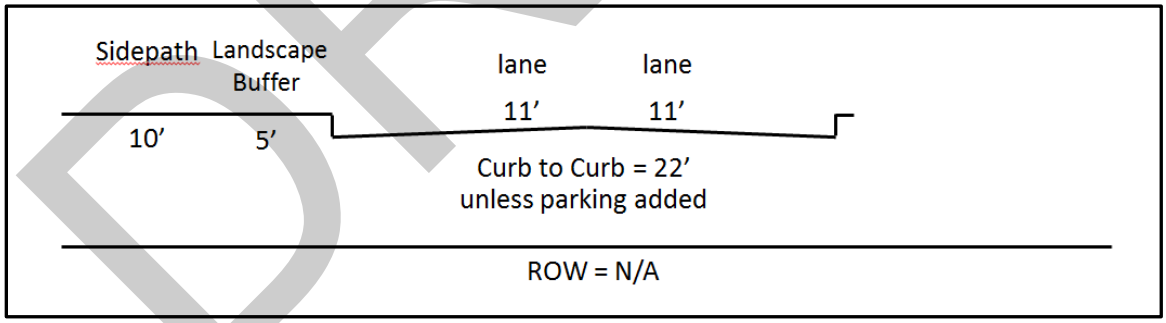
Sidewalk Option	ROW	Estimate
a: West Evans Creek Rd; S of Palmerton Park	N/A	$624,000
b: 1st St: Broadway to Cedar St	40’	$166,000
c: 2nd St Cedar to Ward Creek	40 – 35’	$80,000
d: Berglund St	50 – 36’	$332,000
e: Oak St	40’	$456,000
f: Cedar St	60’	$629,000
g: Robbins Ave	28’	$153,000
h: Park St	36’	$370,000
i: Gardiner St	50’	$243,000
j: 4th St off of Berglund St	34’ 8”	$173,000

Key Considerations/Impacts: These options, with the exception of Gardner Street and Cedar Street, will require additional right-of-way. Pedestrians would be safer traveling on a full six foot sidewalk and the protection of a curb. Utility pole locations may be an issue for some options.

Improvement Sidepath Option (P12-M): Create 10’ sidepath

Description: A ten foot sidepath would be built on West Evans Road north through Palmerton Park**.**

Roadway Cross-section Example



Benefits: A sidepath would give a comfortable separated space for bicyclists and pedestrians, maximizing use. This option would require less right–of-way than other options.

Preliminary Cost Estimate: $240,000

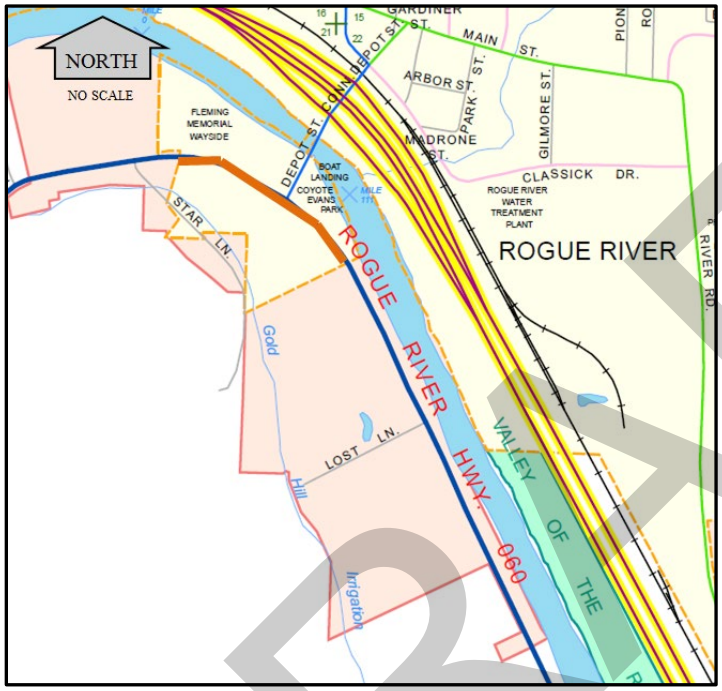
Key Considerations/Impacts: This option may require additional right-of-way, a consideration. The street widths that exist might not facilitate this improvement. Buffer types and widths need to be considered where the path crosses private accesses.

Pedestrians and bicyclists would be safer traveling on a sidepath. Sidepaths save expenses in the form of ADA ramps, curb, and the combination of sidewalks and bicycle lanes. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

P13 OR99

Deficiency: With the high volume of vehicles using OR99, there should be improved sidewalk facilities for pedestrian safety on both sides of OR99 within the UGB. There are just shoulders currently on this high speed, high volume facility. This section of roadway has a posted speed of 30 mph, but goes up outside the city limits. The 2040 ADT for this street is projected to be 8300 north of Depot Street and 4200 to the south.

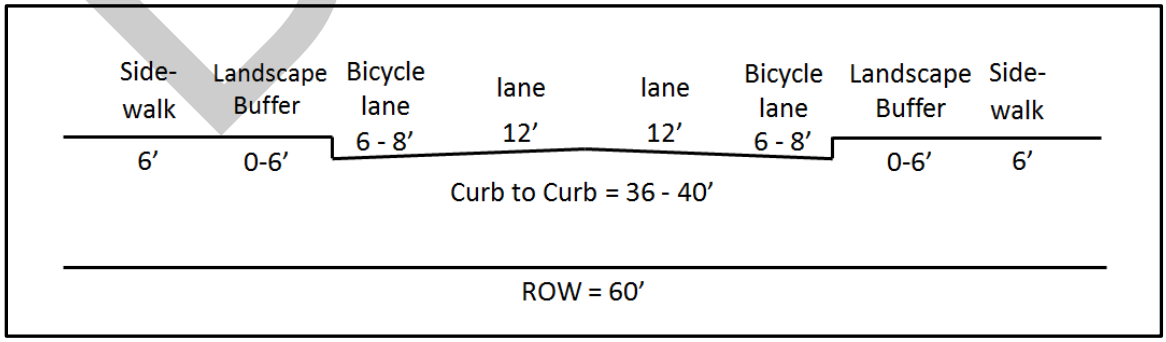
Vicinity Map



Improvement Option A: Build six foot sidewalks

Description: Six foot sidewalks would be added on both sides of OR99 within the Rogue River UGB.

Roadway Cross-section



Benefits: This sidewalk will provide a designated place for pedestrians traveling on this street, improving comfort and safety separated from vehicular traffic. This will create

non-automobile connections to the new development on the western edge of the city along OR99. The curbs will help protect pedestrians from vehicles veering out of their lane. This option would improve the pedestrian facilities to fair.

Preliminary Cost Estimate: $675,000

Key Considerations/Impacts: This will not provide as much separation as other options, such as sidepaths. With twelve foot travel lanes there will not be any detrimental effects to the vehicular traffic. Pedestrians would be much safer traveling on a full six foot sidewalk and having the protection of a curb. Bicycle deficiencies are not improved. Sidewalk does not currently exist that is shown on the roadway cross sections. This option follows the guidance in ODOT's Highway Design Manual for urban fringe/suburban areas.

Notes: TSPs cannot obligate ODOT to fund a future improvement unless the project is already programmed in the STIP. Improvements on State facilities would need to be City/ODOT projects to address a performance target deficiency. The City will need to show alternate funding sources to fund the improvement on a State facility until the project is funded in the STIP (e.g., LID, SDCs, developer exactions, CIP etc.…)

This is also the same location as the Project B9-A sidepath, so either sidewalks or a sidepath could be constructed depending on ROW or local context as needed.

Bicycle Projects

Table 17: Bicycle Projects

Project #	Description	Agency	Cost	Score
B1-C	Pine St (East Main St – City Limits): Add 10' sidepath	City	$480,000	12.1
B9-A	OR99 (MP 7.9 to MP 8.48/Landsiedel Ln): Add 10' sidepath	City/ODOT	$490,000	11.3
P12-P	Pine St (Depot – East Main St): Add buffered bicycle lane	City/SRTS	$417,000	9.4
B8-C	3rd St (Pine St – City Limits) : Add 10' sidepath	City	$528,000	7.7
B5-A	Broadway St (1st St – N) : Add 6' bike lanes	City	$35,000	6.8
B6-B	Broadway St (East Main – 1st St): Add 8' buffered bike lanes	City	$18,000	6.5
B4E-A	East Main St (Ward Creek – North River Rd) : Add 6' bike lanes	City	$12,000	6.3
B4W-A	East Main St (Pine St - Ward Creek): Add 6' bike lanes	City	$12,000	1.5

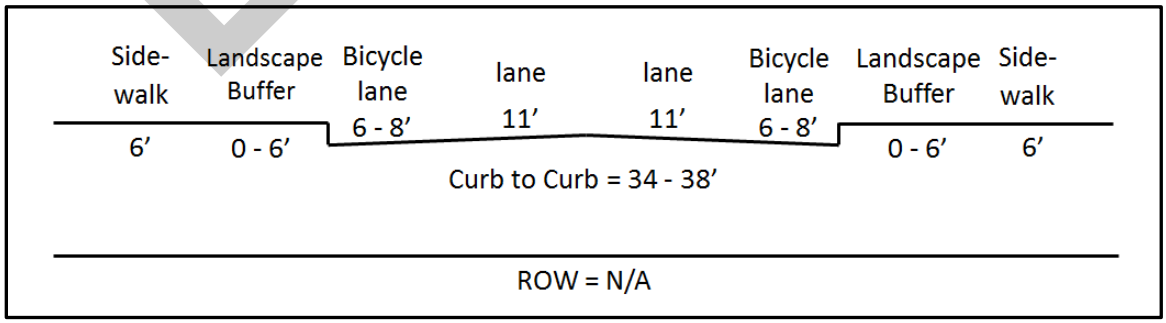
Safe Routes To School (Project P12)

Project P12 was created to cover beyond the Pedestrian or Bicycle sections. As noted in Technical Memorandum #6 and shown in the vicinity map, Safe Routes to Schools (SRTS) area covers generally the entire city. Table 5 summarizes the SRTS options.

Improvement Bicycle Lane Option (P12-P): Create buffered bicycle lanes

Description: Add a six foot paved bike lane and a two foot buffer to Pine Street from Depot Street to East Main Street.

Roadway Cross-section Example



Benefits: Bicycle lanes would give a space for bicyclists, vehicles not allowed in lanes.

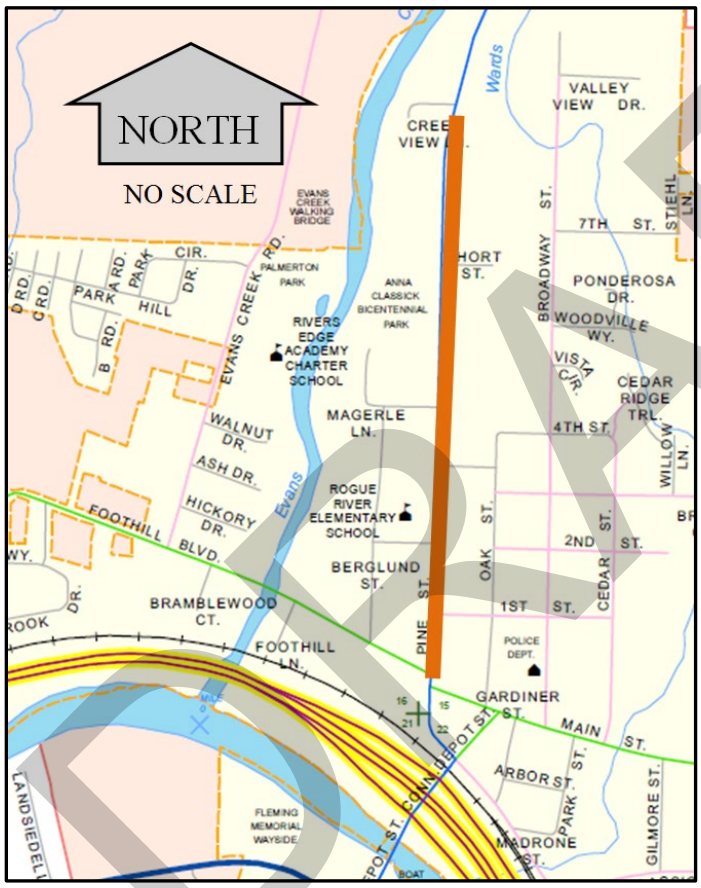
Preliminary Cost Estimate: $417,000

Key Considerations/Impacts: This option may require additional right-of-way, a consideration.

B1 Pine Street

Deficiency: There are no bicycle lanes on Pine Street, from Main Street to East Evans Creek Road. Pine Street has paved shoulders running along both sides of Pine Street, beyond the elementary school and into suburban area until it turns into East Evans Creek Road. This section of roadway has a posted speed of 25 mph, with the exception of the school zone. The 2040 ADT for this street is projected to be 2500. While LTS 2 is sufficient for most users, LTS 1 is preferred for sections at least within a half-mile of an elementary or junior high school.

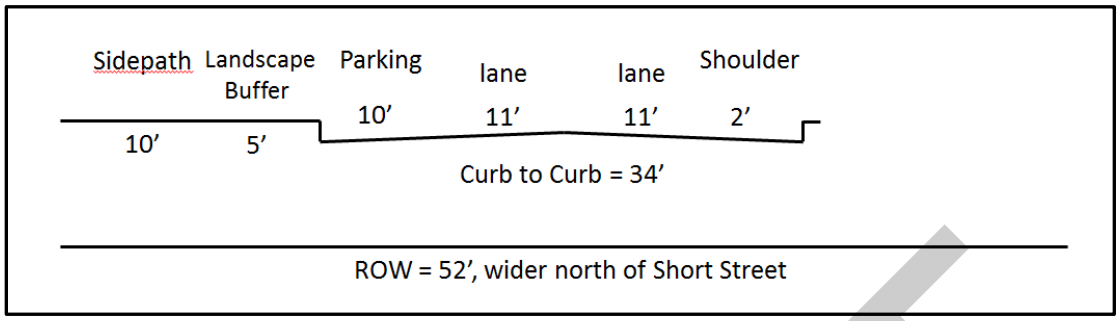
Vicinity Map



Improvement Option A: Add a sidepath

Description: Add a 10’ sidepath from East Main Street to East Evans Creek Road

Roadway Cross-section



Benefits: A sidepath offers a separate facility from the roadway for both pedestrians and bicyclists. This improves the overall safety and level of comfort. A sidepath is safer for users by providing a buffered landscape strip between vehicles. This improves the LTS rating from LTS 2 to LTS 1 and is the only option to reduce the stress rating.

Preliminary Cost Estimate: $48,000

Key Considerations/Impacts: To avoid right-of-way acquisition, centerline of the roadway may need to be realigned. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

B4W East Main Street, West of Bridge

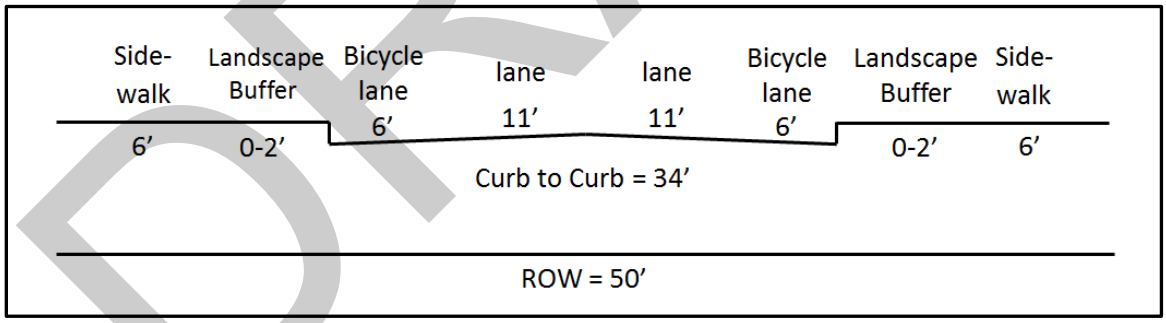
Deficiency: East Main Street needs to create bicycle lanes or show shared path markings for vehicles and bicycles from the Ward Creek bridge west to Pine Street. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 6600.

Vicinity Map

Improvement Option A: Create six foot bicycle lanes

Description: The existing parking would be converted into six foot bicycle lanes.

Roadway Cross-section (west of bridge)



Benefits: Designated bicycle lanes would improve bicyclist safety and comfort. This creates an LTS rating of 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $12,000

Key Considerations/Impacts: On-street parking is lost. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

B4E East Main Street, East of Bridge

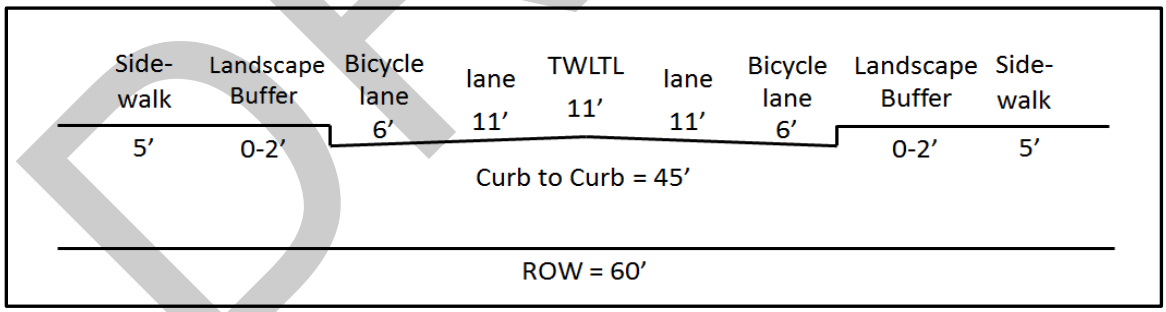
Deficiency: East Main Street needs to create bicycle lanes or show shared path markings for vehicles and bicycles from Ward Creek west to the Ward Creek bridge. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 9800. East Main Street east of Ward Creek to North River Road has a wider shoulder on the north side to Wards Creek Road that could be converted into a four to six foot bicycle lane.

Vicinity Map

Improvement Option A: Create six foot bicycle lanes

Description: The existing parking would be converted into six foot bicycle lanes.

Roadway Cross-section (east of bridge)



Benefits: Designated bicycle lanes would improve bicyclist safety and comfort. This creates an LTS rating of 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

Preliminary Cost Estimate: $12,000

Key Considerations/Impacts: With 60 feet of right of way this option should fit within that. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

B5 Broadway Street North

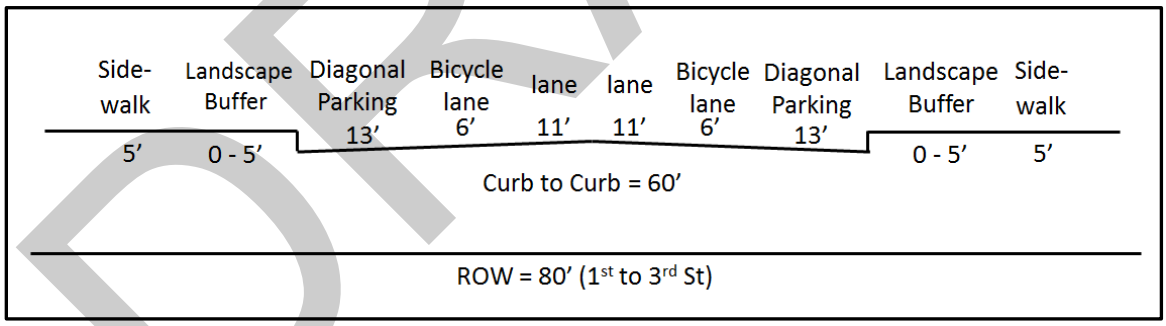
Deficiency: Broadway Street north of 1st Street needs to have bicycle lanes. This section of roadway has a posted speed of 25 mph.

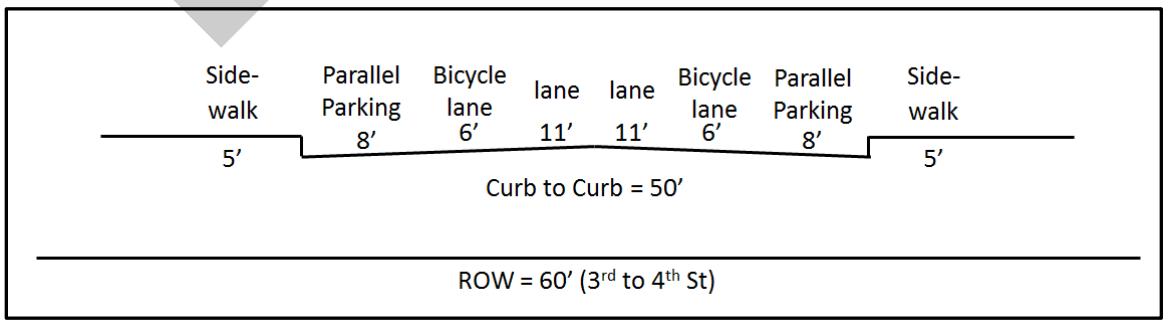
Vicinity Map

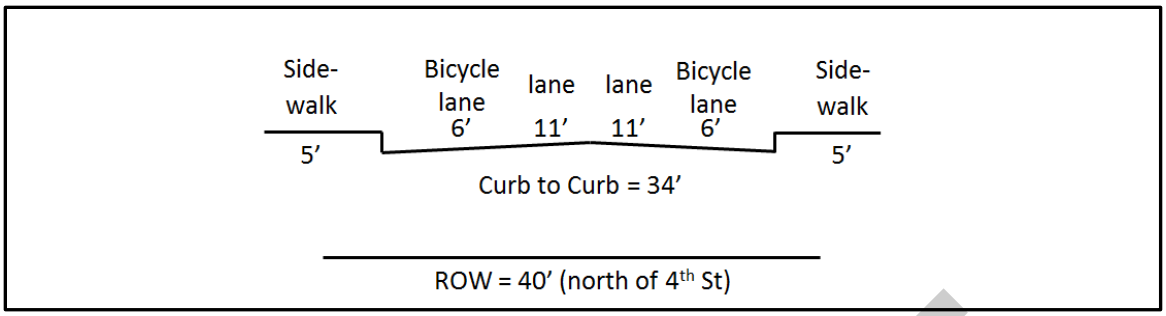
Improvement Option A: Create six foot bicycle lanes.

Description: Six foot bicycle lanes would be striped from 1st Street to the end of Broadway Street.

Roadway Cross-Sections







Benefits: A designated bicycle lane would improve safety and comfort for bicyclists. The LTS rating remains at LTS 2. A bicycle lane has a Crash Reduction Factor (CRF) of 0.36.

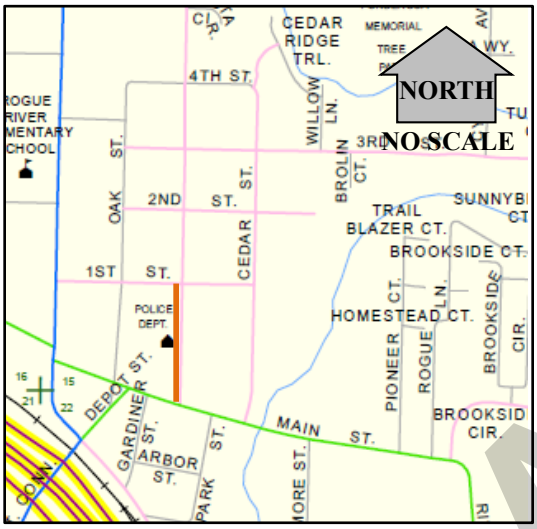
Preliminary Cost Estimate: $35,000

Key Considerations/Impacts: Diagonal parking could be preserved (at 13 foot width) as the paved street surface is wide enough for eleven foot travel lanes and six foot bicycle lanes. Broadway Street's width narrows to the north. There may be interference/safety impacts between backing vehicles and bicyclists as visibility is restricted. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected. Parking may be affected as there is less right-of-way north of 3rd and 4th Street. Right-of-way will be an issue north of 4th Street. Right-of-way would be needed if sidewalks are desired. In the section north of 4th Street, where the right-of-way is 40 feet, a sidepath may be an option the City would like to consider.

B6 Broadway Street South

Deficiency: Broadway Street south of 1st Street to Main Street needs to have bicycle lanes on both sides of the street and is a LTS 3 section. This section of roadway has a posted speed of 25 mph. The 2040 ADT for this street is projected to be 3000.

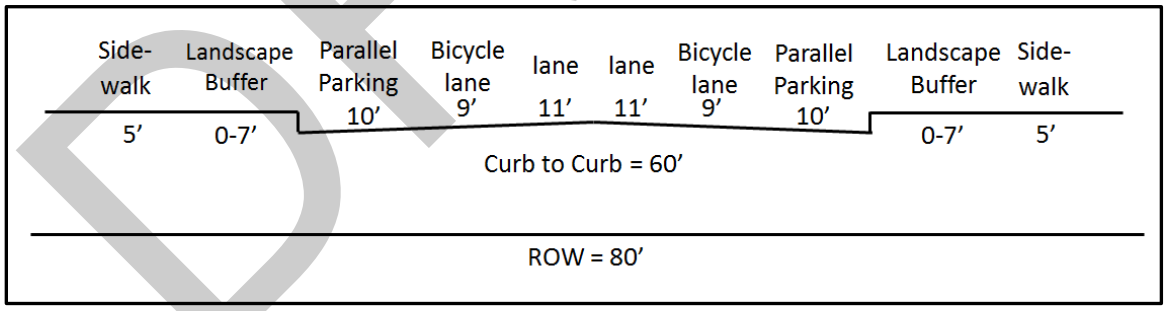
Vicinity Map



Improvement Option A: Create nine foot buffered bicycle lanes

Description: Nine foot buffered bicycle lanes would be striped from 1st Street to East Main Street. There would be six foot bicycle lanes and three foot buffers.

Roadway Cross-section



Benefits: A buffered bicycle lane would give extra separation between bicyclists and vehicles which will improve safety, maximize use of the facility, and improve comfort over Option A. The LTS ranking improves from LTS 3 to LTS 2. A buffered bicycle lane has a Crash Reduction Factor (CRF) of 0.47.

Preliminary Cost Estimate: $18,000

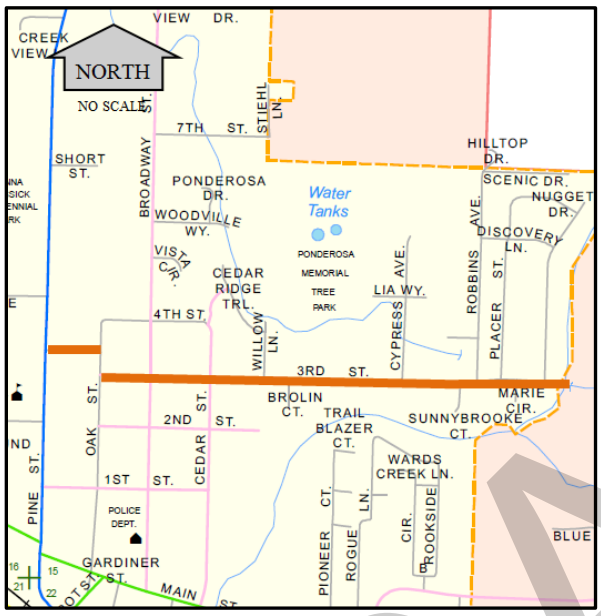
Key Considerations/Impacts: Diagonal parking would be converted into parallel parking to accommodate the buffer spaces. This will decrease the number of parking

spaces. Parallel parking would trade off backing issues with bicyclists with potential "dooring" impacts. Reducing lane width to eleven feet will not have any significant impacts to vehicular capacity or operation. Pedestrian sidewalks are not affected.

B8 3rd Street

Deficiency: 3rd Street is missing necessary bicycle facilities given the collector-level classification. This section of roadway has a posted speed of 25 mph.

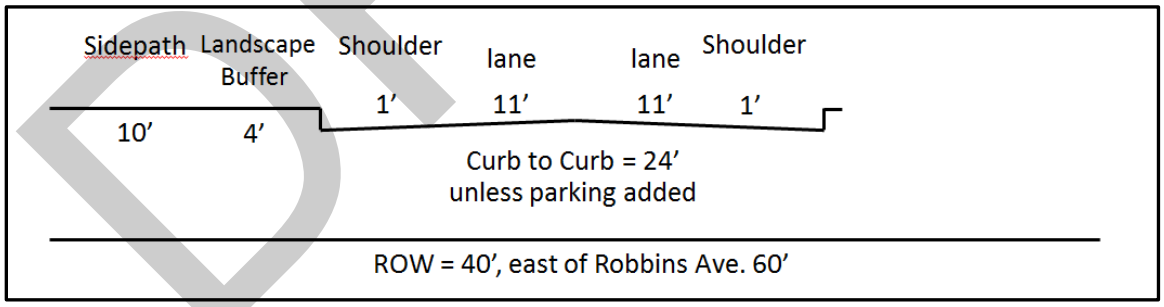
Vicinity Map



Improvement Option A: Create a 10' sidepath

Description: Add a ten foot sidepath should be built on one side of 3rd Street.

Roadway Cross-section



Benefits: There are no restriping costs, the lane lines stay as they exist now. A sidepath would provide a separated space from the roadway for both bicycles and pedestrians. This will provide the maximum comfort and use of the facility. This improves the LTS ranking to LTS 1.

Preliminary Cost Estimate: $528,000

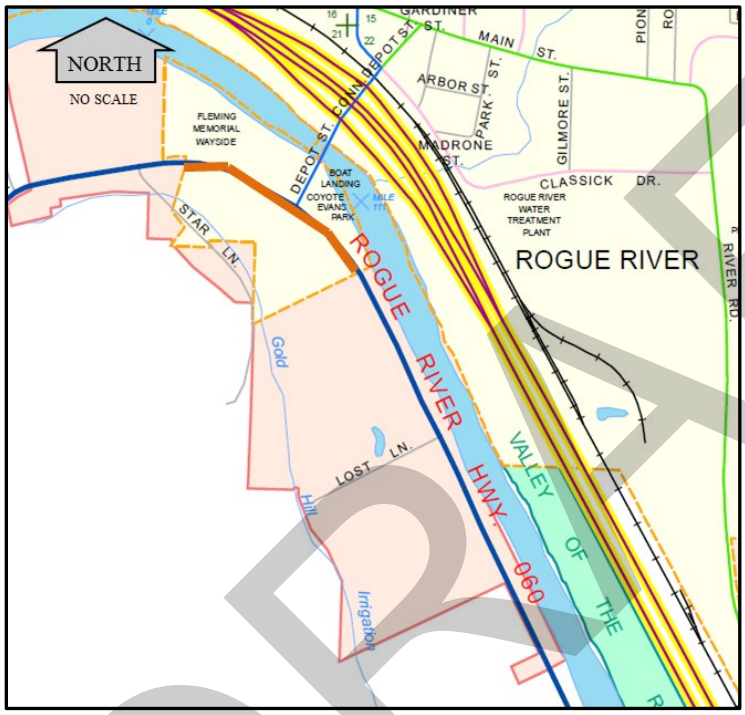
Key Considerations/Impacts: If the current centerline of the roadway is kept, then right-of-way may be an issue west of Robbins Avenue, at least on one side of the

roadway. However, the total dimensions of this option will fit within the current right-of-way, if the centerline is shifted. The sidepath may have will benefit bicyclist and pedestrians both. No extra pedestrian project is necessary on 3rd as this option provides for both the bicycle and pedestrian modes. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

B9 OR99

Deficiency: With the high volume of vehicles using OR99, there should be improved bicycle facilities. The bicyclists need to feel safe in this public environment. This should be on both sides of OR99 within the Urban Growth Boundary of Rogue River. There is basically just shoulders on this high speed, high volume facility. This section of roadway has a posted speed of 30 mph, but goes up outside the city limits. The 2040 ADT for this street is projected to be 8300 north of Depot Street and 4200 to the south.

Vicinity Map



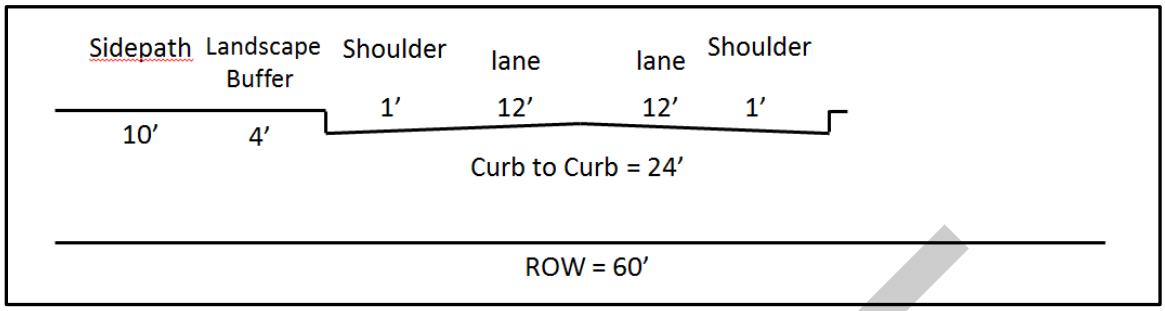
Note: The options shown below are all consistent with ODOT's Highway Design Manual standard for urban fringe/suburban areas.

TSPs cannot obligate ODOT to fund a future improvement unless the project is already programmed in the STIP. Improvements on State facilities would need to be City/ODOT projects to address a performance target deficiency. The City will need to show alternate funding sources to fund the improvement on a State facility until the project is funded in the STIP (e.g., LID, SDCs, Developer Exactions, CIP etc.…)

<u>Improvement Option A: Create a 10' sidepath</u>

Description: A 10' sidepath would be built on one side of OR99 within the Rogue River UGB. Buffer space could vary depending upon available ROW.

Roadway Cross-section



Benefits: A sidepath would create a separate space from vehicles for both bicyclists and pedestrians. This will maximize safety, comfort and use of the facility. This also works well with a proposed Rogue River Greenway path route along OR99. This improves the LTS rating to an LTS 1.

Preliminary Cost Estimate: $490,000

Key Considerations/Impacts: There may be environmental issues to address. Improvement would be on one side of OR99, likely the river side due to property, utility poles, and ROW considerations. The expanded roadway corridor may require additional property impacts. Within the urban portions of Rogue River where the path crosses private accesses additional considerations for sight distance and visibility to path users need to be taken into account. Pedestrians would be much safer traveling in a sidepath. Design considerations, such as storm drainage, should be given for crossing a driveway or roadway, likely less impact than a sidewalk (no ramps required).

Notes: This is also the same location as the Project P13 sidewalks, so either sidewalks or a sidepath could be constructed depending on ROW or local context as needed.

Transit Projects

Table 18: Transit Projects[1]

Project #	Description	Agency	Cost	Score
T1-A	Add on-demand transit service	City	$179,000/yr	10.7

[1]Project T2 (Stop placement) had Option C selected, but since this option leaves the current stop location in place, there is no need for a separate project.

T1 Infrequent Transit

Deficiency: An internal city public transit circulator or dial –a-ride on demand service is needed. One hub could be the stop for the Rogue Valley Commuter line between Grants Pass and Medford. There is a lack of service for those without a personal vehicle across all ages and demographics.

Improvement Option A: On-demand service

Description: Add an on-demand "dial-a-ride" service that is not restricted to any age group, user class, or trip priority. A person arranges a pickup and a destination over the phone. Rates are less than a taxi and usually a short (shuttle-type) bus.

Benefits: There is no fixed route and is not focused on older citizens. On-demand service, in contrast to a fixed route, may reduce the "last mile" distance to/from transit at the origin and destination. This reduces expenditures when demand or ridership does not exist. This is a good initial start to bus service and helps identify potential users and destinations when a city transit service is in place. This option would improve transit services to good.

Preliminary Cost Estimate: $179,000 per year

Key Considerations/Impacts: On-demand service requires use of dispatch services to coordinate and schedule the rides. Specialized software/phone applications can minimize dispatch costs and waiting time. This bus must be equipped to handle at least two mobility devices if state or federal funds are used to purchase the vehicle. This bus should also have a bicycle rack to accommodate bicyclists.

Notes: Estimates based on weekday service with 12 hours a day.

Operations and Safety Projects

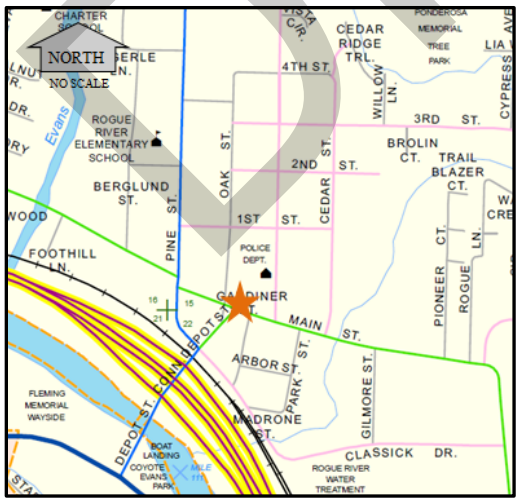
Table 19: Operations & Safety Projects

Project #	Description	Agency	Cost	Score
OS4-F	Depot & Pine St intersection: Convert to Pine St as through movement & Depot St to one-way NB	City	$81,000	12.5
OS3-D	Depot & East Main St intersection: Depot St one-way NB & Pine/Main roundabout	City	$280,000	10.6
OS8-C	Pine & Main St intersection: compact roundabout	City	$250,000	9.6
OS5-E	Interchange refinement study	ODOT	$750,000	2.6

OS3 Depot Street and Main Street

Deficiency: Intersection operation will likely be affected by queuing extending from the adjacent Main & Pine Street and Pine & Depot Street intersections. There will be congestion with slowing speeds on a daily basis. This congestion and slowing is due to the nearby interchange, because of proximity and problems with the interchange. The overall capacity here is low as the intersection is in a non-standard configuration. Intersection alignment should be investigated. As configured, the northbound movement is indirect and goes through two closely spaced intersections. Both intersection functional areas overlap, leading to increased chance of conflicts, collisions, and pedestrian crash. Drivers too-focused on maneuvering through the intersection might not see a pedestrian. This intersections ADT/C ratio is high at 10.36. Preliminary Signal Warrants (PSW's) were not met for this intersection.

Vicinity Map



Improvement Option A: Convert Depot Street to northbound one-way

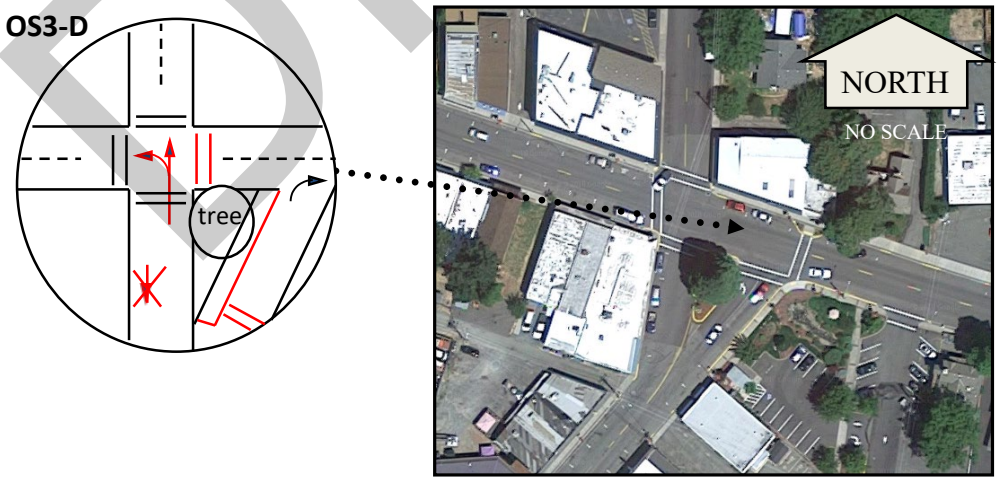
Description: Depot Street becomes a one-way northbound street from Classic Drive to East Main Street.

Benefits: This allows the through traffic that would have been on the right side of the tree to be on the left. Northbound traffic is left of the tree; the northbound right turn lane is retained. This increases safety for pedestrians and bicyclists. Depot Street drivers approaching Main Street now get to encounter a crosswalk and then take a right turn onto E Main Street when permissible. These steps are now separated and easier one at a time. The right turning traffic does not have to look for pedestrians on either of the two crosswalks it currently crosses. This pulls parking out of the middle of the intersection on the east side and puts parking spots where they are safer, outside the intersection. The curb and sidewalk will reduce occurrence of drivers driving the wrong direction on this short section of roadway. The intersection is more standard with an improved alignment and appropriate in size. The Depot Street and East Main Street intersection V/C ratio lowers slightly from 0.36 to 0.35. The Depot Street and Pine Street intersection V/C ratio also lowers from 0.72 to 0.68. The intersection's 2040 LOS remains at LOS C. The Crash Reduction Factor (CRF) for converting to a two-way street to a one-way street is 0.47.

Preliminary Cost Estimate: $270,000

Key Considerations/Impacts: Drivers wishing to travel south would need to relocate to Pine Street, most currently do that movement. This retains most of the parking spots along Depot Street. The East Main Street and Pine Street intersection V/C ratio rises from 1.08 to 1.39 and will meet preliminary signal warrants which will trigger the need for OS8 Option C (Pine/Main roundabout) which is included in the cost estimate. A Pine/East Main Street roundabout with bypass lane on the east to north will have a V/C ratio of 0.68 and LOS C.

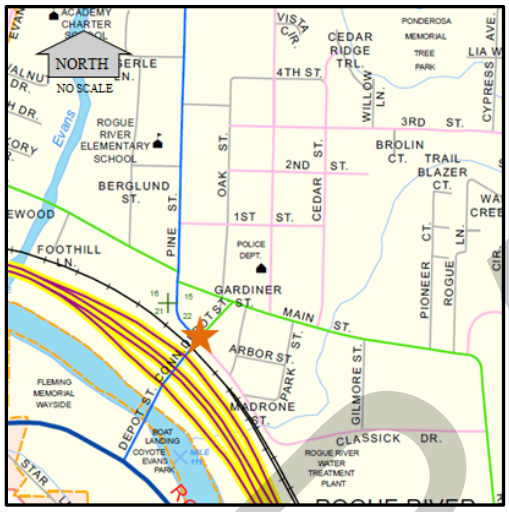
Intersection Diagram



OS4 Depot Street and Pine Streets/Classick Drive Intersection

Deficiency: This intersection functions differently as it is a three-way stop at a four-way intersection. The intersection of Depot Street with Pine Street and Classick Drive is too close to railroad tracks and to the I-5 northbound ramp terminal intersection. The interchange creates congestion and affects the closely spaced city street system. The functional area, which includes distance traveled during reaction, deceleration, and maneuvering time plus distance for queue storage, overlaps between the two. Functional area overlaps create too much for a driver to process at once which can lead to an increased rate of crashes.

Vicinity Map



Improvement Option A: Pine Street through movement

Description: The through movement is realigned to be to/from Pine/Depot streets. Classick Drive becomes a right in only. Depot Street becomes a right only. Classick Drive and Depot Street become one way eastbound and northbound streets till they end.

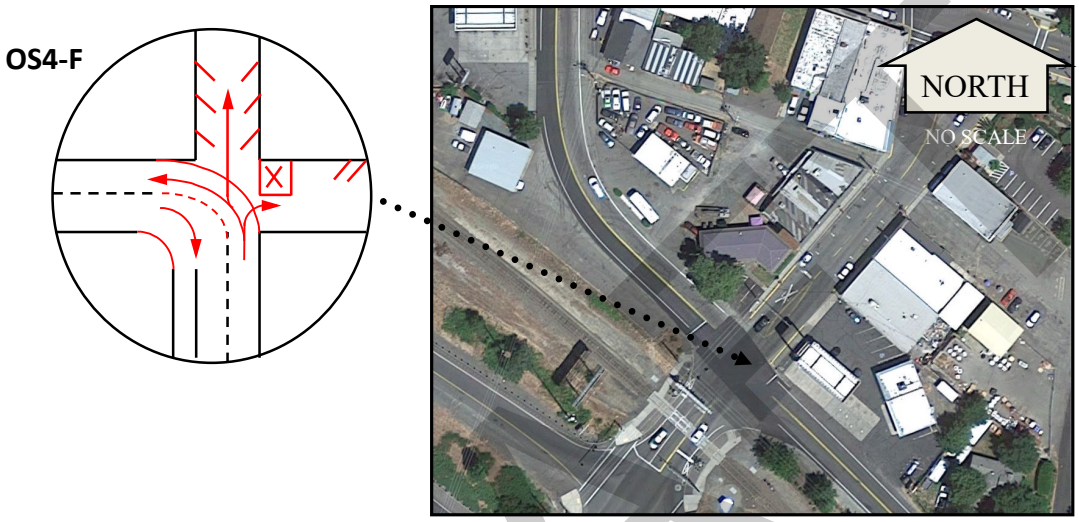
Benefits: The west and south legs of the intersection becomes a through move with a couple of optional right turns. This will result in better operation. Pedestrian and bicycle movements will become safer as less turning conflicts are present. This should reduce queues and delays at this location. The Depot Street and Pine Street intersection V/C ratio lowers from 0.72 to 0.54. The intersection's 2040 LOS improves from LOS F to LOS A. A Crash Reduction Factor (CRF) of 0.47 should be applied to Depot Street and Classick Drive due to becoming one-way streets.

Preliminary Cost Estimate: $ 81,000 (OS4-F only) - $361,000 (OS3-D+OS4-F+OS8-C)

Key Considerations/Impacts: May create some parking. This option makes the intersection more difficult to cross as the SW corner is not accessible. Pedestrians will need to travel out- of- direction and use the sidewalk on the east side of Depot and cross

back over at the I-5 southbound ramp terminal. This will also give pedestrians crossing midblock only less risk on streets that are no longer the through movement. This will help trucks keep their current stop and route on Classick Drive, including exiting via North River Road to the next interchange. This project also will trigger need for Project OS3-D as Depot Street is converted to one-way under OS4-F. Project OS3-D already includes Project OS8-C within it.

Intersection Diagram



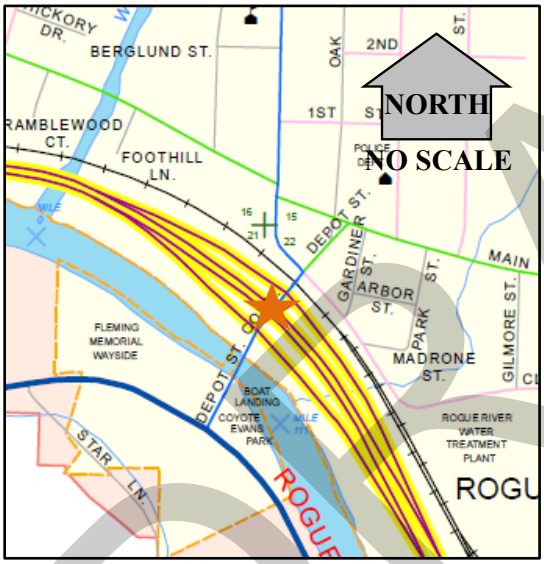
OS5 Depot Street Interchange

Deficiency: This signalized interchange will have queues in both directions on Depot Street radiating from the closely spaced ramp terminals. These queues are evident under existing conditions and will get worse. There will be an unreasonable delay due to queuing on all legs, especially on the exit ramps.

The V/C at the southbound ramp terminal is forecasted to be over capacity at a v/c of 1.07 in 2040, and have an ADT/C ratio (average daily traffic relative to hourly available capacity) of 10.36.

The V/C at the northbound ramp terminal is also forecasted to be 1.07 in 2040 and have an ADT/C ratio of 11.06. Both intersections are predicted to exceed the standard of 0.85 in 2028 and reach capacity (v/c = 1.00) in 2036.

Vicinity Map



Impacts Discussion: There are three elements creating above standard and over capacity V/Cs at the interchange: volume, timing, and space restrictions. The projected volumes are not high, just more than this system and interchange structure can handle. The volume levels would not normally be expected to cause this level of congestion for an urban area the size of Rogue River. The high ADT/C ratios indicate a high amount of congestion with significant speed reductions and corresponding delays over most of the peak hour.

The Rogue River interchange brings more traffic and congestion onto itself as it also routes traffic to or from OR99. The interchange operates between Grants Pass and Medford and takes in several trips from these locations. Rogue River functions as a bedroom community to these larger cities with about a third of trips going to destinations in Jackson County and over 40% to destinations in Josephine County. People traveling from the Evans Creek valley north of the city also must funnel through this interchange.

About 90% of the commuting trips through the interchange are by single-occupant vehicles based on the latest American Community Survey 2010-2015 data.

There is already optimized coordinated signal timing in operation at this interchange done by ODOT District 8. Additional timing improvements will not address capacity issues. Longer signal cycle lengths could theoretically push more traffic through, but at the expense of much longer queue lengths which there is not room for on the ground.

Available queue storage is at a premium in and immediately surrounding the interchange. More interchange width would help, but the railroad tracks and the river constrain that element. The railroad tracks and I5 itself creates issues of widening the northbound ramp (retaining walls likely needed). Longer ramps to prevent queues from backing onto the mainline through lanes of I5 should be pursued, but there is the nearby Evans Creek bridge that significantly adds to the cost of lengthening the southbound ramp. The southbound ramp terminal is constrained by the adjacent bridge over the Rogue River and the Rogue River Greenway path entrance.

Tight overall geometry is a large problem when considering the turning radii of trucks at these intersections and the narrow Depot Street undercrossing. Trucks cannot turn from the southbound off ramp onto Depot Street and completely stay in their own lane. The turning radius of larger trucks and the off-tracking of the trailers causes some vehicles waiting to turn left to have to back up to make room (not always possible without delay). Trucks and emergency service vehicles do not have room to wait on either side of the railroad tracks and stay in a lane. There is not enough queue storage between the ramp terminals to accommodate even current demands. The Depot Street undercrossing is too narrow and only allows one lane into the downtown. This one lane then controls the Depot Street and Pine Street/Classick Drive intersection, as it is the only move not stopped. Vehicles from the other approaches need to divert to other routes or "force" themselves into the intersection to go though it which causes immediate backups and delays in the interchange.

There is also a safety issue as I5 bends between the railroad tracks and the river at the City of Rogue River. This bend reduces sight distance just before the gore point of the Rogue River southbound exit ramp. Adding to the geometry issues is the I5 bridge itself over Evans Creek, also just before the gore point of the Rogue River southbound exit ramp.

Future volume growth through the interchange will not be entirely because of city growth. Looking at the segment between the ramp terminals, 44% of the growth to 2040 is from increased background or through growth on County roadways or on I-5. The remaining 56% of the growth at 2040 is projected City growth in the residential, commercial, and industrial sectors.

Future growth can be highly variable as it is based on a number of economic factors that cannot be directly controlled. To help address this, a sensitivity analysis was performed with an extra 10% and 25% growth in volume. A ten percent volume growth represents the daily fluctuation that could occur in a given week. The 25% growth represents a much larger impact due to unexpected or faster than predicted background growth either

within the city, in the surrounding Jackson County areas to the north, or along I-5 to the north and south

With a 10% increase, v/c ratios slightly increase for the southbound ramp terminal but northbound queues increase substantially to about halfway up the ramp into the deceleration portion of the ramp. This increase could lead to a higher risk of high-speed rear-end collisions. The 25% increase pushes queues to about two-thirds the ramp length in the northbound direction and very close to the gore point with the I-5 mainline in the southbound direction. At larger sensitivity levels the resulting queues on Depot Street would likely extend over the Rogue River bridge and impact OR99 in addition to substantial congestion in the Rogue River downtown area. Table 20 shows the sensitivity analysis results. This shows that even small increases in volumes can have substantial impacts to the surrounding system. Given the constraints, these impacts could create a substantial burden on the interchange area.

Table 20: Sensitivity Analysis Results

Scenario	NB Ramp Terminal	SB Ramp Terminal
2040 TSP Future Conditions	Off-ramp queues : 300' Intersection v/c = 1.07 Intersection LOS = F	Off-ramp queues: 400' Intersection v/c = 1.07 Intersection LOS = F
+ 10% volume increase	Off-ramp queues : 725' Intersection v/c = 1.07 Intersection LOS = F	Off-ramp queues : 400' Intersection v/c = 1.13 Intersection LOS = F
+ 25% volume increase	Off-ramp queues : 1050' Intersection v/c = 1.44 Intersection LOS = F	Off-ramp queues : 650' Intersection v/c = 1.68 Intersection LOS = F

It has been discovered that trying to improve the interchange operations is a delicate and complex issue. When one terminal was improved in terms of v/c with an additional lane on the ramp, the other terminal became much worse. Improving the northbound ramp terminal, by adding another lane, affects the southbound ramp terminal that it is coordinated with. This change of cycle time and which intersection controls may increase the southbound ramp terminal v/c up to possibly 1.25. The overcapacity condition will increase queue lengths to over the railroad tracks and into adjacent intersections, and potentially onto the I5 mainline which could lead to high-speed rear end collisions. Changing signal timing or even re-allocating the lanes on Depot Street may fix one ramp terminal location but causes substantial issues at the other.

There is a need to be able to investigate large lane configurations on the ramps and on Depot Street with their impacts on the adjacent local system, but the permutations and required detail level are too great for a TSP-level analysis. Some improvements that would also need to be analyzed, such as new interchange forms or locations require a much broader set of expertise and detail and also would generate many new solutions

both at a high-system level and a detailed operational level is also not appropriate for a TSP analysis.

A large number of potential alternatives were evaluated at the local street level to address deficiencies. A set of local improvement alternatives have been identified in this TSP memorandum to help funnel traffic to and from the direct interchange area (Projects OS3-D, OS4-F, and OS8-C). Because of the limited street network, these are all interrelated together. Project OS4-F converts the Depot/Pine/Classick intersection into a couple of "right-off's" to Depot Street and Classick Drive but also ends up triggering OS3-D to complete the on-way conversion of Depot Street and OS8-C to mitigate the shifted traffic from OS3-D and OS4-F. The end result will streamline the Depot/Pine intersection by eliminating conflicting movements from the minor approaches with the main/through Depot-Pine movements which should eliminate any queues that backup into the interchange and greatly reduce delays through the intersection. The project will also improve movements into the interchange by removing a driver decision point, reducing conflicts and improving storage distance. The OS3-D and OS8-C would also assist in keeping the flow moving away from the interchange and re-route/meter inbound traffic. While this project would not affect the v/c's at the interchange, it will help improve system-level operations.

ODOT has exhausted all possibilities to try to make this interchange work better within the limits of a TSP analysis. All of the operational, safety, geographic, and geometric issues that surround this interchange confirm a set of unique conditions shown in the Rogue River TSP that do not typically exist in other small cities. This reinforces the need for further future study such as a refinement plan, a interchange access management plan (IAMP) and/or consideration of alternative mobility standards.

<u>Improvement Option A: Interchange refinement study</u>

Description: A separate refinement plan will be required to investigate more changes to the interchange ramps, ramp terminals and the Depot Street cross-section north of the river in order to address the queuing, capacity and geometric issues at the interchange and the surrounding local system.

The refinement study should investigate the issues and deficiencies that were brought up during the TSP process but are too detailed in scope for the TSP analysis along with aspirational alternatives to address system deficiencies. These include but are not limited to:

- Emergency turnarounds on I-5 (Deficiency OS11) to improve response time to/from incidents
- Additional crossings of the Rogue River either at Broadway Street (Deficiency C1) or Foothill Boulevard
- Turning radius issues at ramp terminals (Deficiency OS12)
- Partial interchange at Foothill Boulevard
- Changed interchange form – SPUI or split diamond combined with extra river crossing

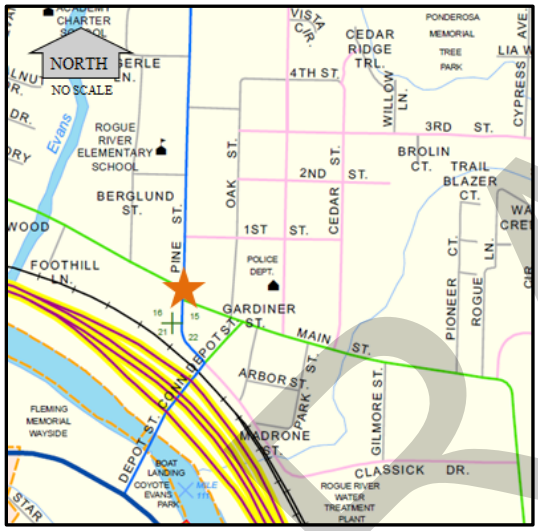
- Revisions to the Exit 45A/B Twin Bridges Rd/OR99 interchange to accommodate increased volumes/truck traffic
- Investigating a new interchange located between Exit 45 & 48 that would serve both locations while reducing/eliminating grade-crossing conflict with railroad.
- Interaction between the interchange and the local system; especially between the Pine Street/Classick Drive and Pine/Main St intersections (possibly with a OS4 G/H type configuration)
- Analyzing restrictions on future growth as much as possible on the south side of the Rogue River to reduce impacts to the I-5 interchange and Depot Street.

Preliminary Cost Estimate: $750,000

OS8 Main Street and Pine Street

Deficiency: Intersection operation will likely be affected by queuing extending from the adjacent Main & Pine Street and Pine & Depot Street intersections. There will be congestion with slowing speeds on a daily basis. The overall capacity here is low as the intersection is in a non-standard configuration. The skewed alignment of this intersection should be investigated. As configured, the east and westbound movements are relatively indirect as the east and west legs are offset. Drivers too-focused on maneuvering through the intersection might not see a pedestrian. In 2035 this intersection exceeds standard of 0.95 V/C and is at a V/C ratio of 1.00 in 2037. In 2040 this intersection should be over capacity with a V/C ratio of 1.08 and an ADT/C ratio of 12.94. Preliminary Signal Warrants (PSW's) were not met at this intersection.

Vicinity Map



Improvement Option A: Convert to a compact roundabout

Description: Convert the intersection into a compact roundabout at this intersection.

Benefits: A compact roundabout would give equal priority to all legs which will minimize queues. Bicycle traffic could use the sidewalks or share the lane as traffic speeds will be slow. Pedestrian crossings will be kept short which will improve safety and visibility. Main Street would be the same priority as Pine Street. This will improve the intersection operation and safety. As well as a safety improvement the operations improved. The worst leg of this roundabout is on the east leg, with a LOS of C (all others at LOS B) and a v/c ratio of 0.59 (all others below 0.49). The overall intersection control delay is 11.87, with an improved LOS of B. A Crash Reduction Factor (CRF) of 0.88 should be applied for a roundabout.

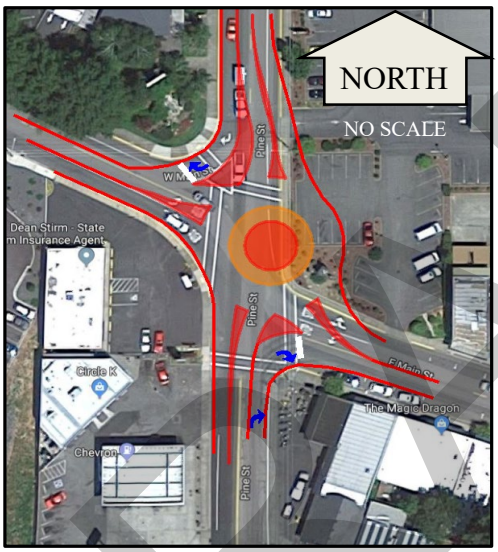
Preliminary Cost Estimate: $250,000

Key Considerations/Impacts: Some additional right-of-way will be required for north and east legs which will have property impacts. All entering legs would then be yield controlled. Fewer takes of property than with fully fixing alignment and skew. Occasionally, traffic backs up from the interchange through this intersection and would also back up through the roundabout. This would limit most movements through this intersection compared to other intersection control types.

Notes: Of the three OS projects (OS3, 4 & 8) this one is only one that could be done as a standalone or as a first phase of the other two. OS3-D includes the roundabout in its cost, so this project is not needed if OS3-D is done first. OS4-F also requires OS3-D to complete the one-way conversion of Depot Street.

Intersection Diagram

OS8-C



Connectivity Projects

Table 21: Connectivity Projects

Project #	Description	Agency	Cost	Score
C10	Code updates – Preserving future connectivity	City	n/a	11.4
C4-B	3rd St Extension (to Wards Creek Dr): East of Blue Ridge Dr	City/ County/ Developer	$9,748,000	10.5
C7-B	7th St Extension: Broadway to Pine St	City	$2,158,000	9.0
C2-A	3rd St Extension: Pine St to West Evans Creek Rd	City	$7,325,000	8.3
C5-A	New roadway parallel with West Evans Creek Rd	City/ Developer	$8,652,000	8.2
C6-A	Broadway Extension to Classick Dr	City	$1,274,000	7.9

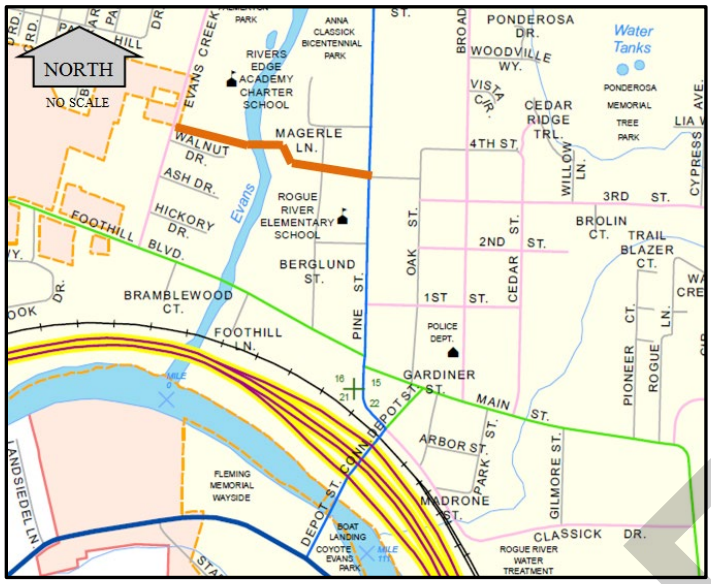
C2 Connectivity Over Evans Creek

Deficiency: Connections are needed across Evans Creek at different locations for modes that include vehicles and perhaps one for just bicycle/pedestrians. Possible locations are 3rd Street, 7th Street, and further north. This will cut down out of direction travel and reduce travel and burden on the intersection of Main and Pine Street. This creek is a limiting factor in terms of day to day travel and emergency alternative routes.

Improvement Option A: Add 3rd Street extension and new Evans Creek structure

Description: Add an extension of 3rd Street. This extension would also include a new bridge structure over Evans Creek. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This would ease the vehicular demand placed on the West Main Street bridge and the Pine Street & West Main Street intersection. The V/C ratio of Pine Street & West Main Street improves from 1.08 to 0.92. The V/C ratio of Foothill Boulevard and West Evans Creek Road improves from 0.28 to 0.19. A bridge here will be the greatest help in creating parallel connectivity for all modes in the form of a continuous east-west street that fully serves the city. Locating a bridge here would provide emergency alternate routes and better response time. This will also provide designated comfortable places for pedestrians and bicycles to use to avoid mixing directly with vehicular traffic.

Preliminary Cost Estimate: $7,325,000

Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage, and floodway considerations need to be taken into account. Right-of-way will be a large consideration, requiring property impacts. The 3rd Street route will require linear impacts along the edge of the elementary school field property. This will take some of the far northern edge of the field, but the alignment should be optimized to minimize impacts. Vehicles, bicyclists, and pedestrians will be able to use the bridge across Evans Creek. The lighter demand on the Main Street and Pine Street intersection will benefit the city in terms of all modes. This connectivity creation will be a benefit to the community and to the junior/senior high school. 3rd Street may be the most fiscally responsible location for reasons of transportation need and due to the smaller cost elevate the structure out of a smaller flood plain. This improvement is has the most positive return for the community and all three schools.

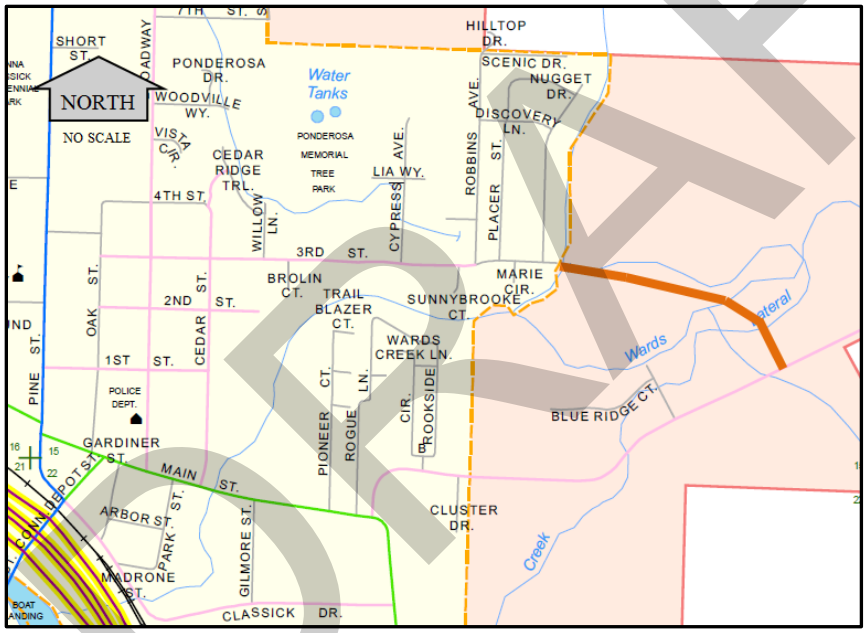
C4 3rd Street Extension to East

Deficiency: Ward Creek is a barrier to getting to the east part of town. There are a cluster of developments to the south of Ward Creek that will prevent east to west connections. 3rd Street should be extended east across Ward Creek and connect with Wards Creek Road. This connection over Ward Creek will create an alternate crossing and a parallel route to Main Street.

Improvement Option A: Extend 3rd Street to Wards Creek Road east of Blue Ridge Drive

Description: Extend 3rd Street from Nugget Drive to Wards Creek Road, bridging over Ward Creek. This would approximately connect to Wards Creek Road approximately 2000' to the east of Blue Ridge Drive. The extension would be approximately 50' wide to accommodate two 11' travel lanes, six foot sidewalks, and eight foot buffered bicycle lanes.

Vicinity Map



Benefits: This would ease vehicular demand placed on East Main Street, creating an alternate parallel route using 3rd Street. This location will improve connectivity for all modes along with creating alternate routes for emergency vehicles. This connection will also allow for and facilitate future private development to the east and would be likely developer-funded.

Preliminary Cost Estimate: $9,748,000

Key Considerations/Impacts: The bridge will impact the banks and potentially the waterway so fish passage may be a consideration. Right-of-way will be a large consideration, requiring property impacts. This improvement will likely depend on a developer.

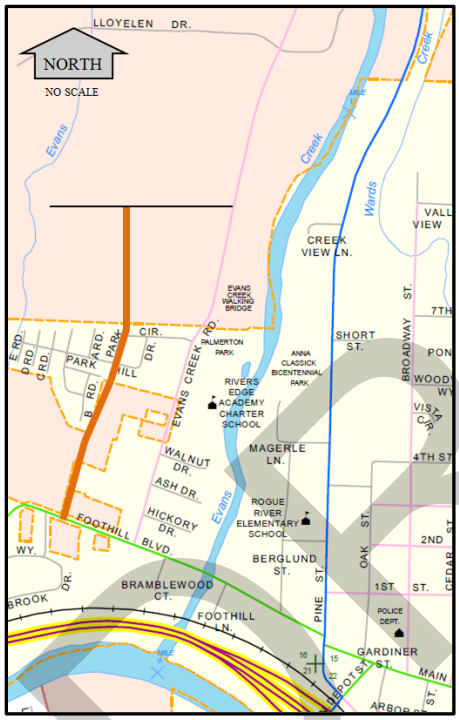
C5 Grow with a Grid

Deficiency: There is a lack of a grid network on the west side of W Evans Creek Road without a parallel road to W Evans Creek Road. This shows a needed alternate route for emergencies and development.

Improvement Option: Build roadway parallel to West Evans Creek Road

Description: Build a parallel roadway approximately 600' to the west of West Evans Creek Road. This route could potentially start near the intersection of Westbrook Drive and Foothill Boulevard, connect into the existing F and B Streets and extend to Road 36-4-16. This roadway would have two 12' travel lanes, six foot bike lanes, and six foot sidewalks.

Vicinity Map



Benefits: This will improve connectivity for all modes and could potentially decrease demand on West Evans Creek Road**.** This would also add a second local route for emergency vehicles.

Preliminary Cost Estimate: $8,652,000 based on 2400' feet of new roadway

Key Considerations/Impacts: Right-of-way will be a large consideration, requiring property impacts. The manufactured home park may be a barrier and/or income/diversity environmental justice issue for a connection south of Park Circle. This improvement is likely developer-based.

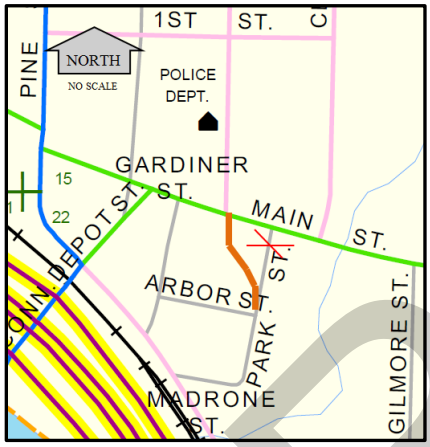
C6 Broadway Extension

Deficiency: Broadway could extend south of East Main Street by making a four way intersection and utilizing the Park Street alignment. The Classick /Madrone Street intersection should also need to be realigned to eliminate the skewed intersection alignment at Classick Drive.

Improvement Option A: Extend Broadway Street to Classick Drive

Description: Broadway Street would be extended from East Main Street, following the Park Street alignment to Classick Drive. A four-leg intersection will be created at Broadway Street and East Main Street. This extension would have two 11' travel lanes, six foot sidewalks, and eight foot buffered bike lanes.

Vicinity Map



Benefits: This would make this a more direct connection for all modes from East Main to Classick Drive. This could encourage re-development of this area south of East Main Street. This would be the best access to land that could be rezoned for several purposes from commercial, to mixed use, to a public property.

Preliminary Cost Estimate: $1,274,000

Key Considerations/Impacts: This option would create additional on-street parking downtown. The extended street will require additional right-of-way which will be a large consideration, requiring property impacts.

Notes: Project C6-B scored better in the evaluation, but conflicted directly with Project OS4-F, so it was dismissed.

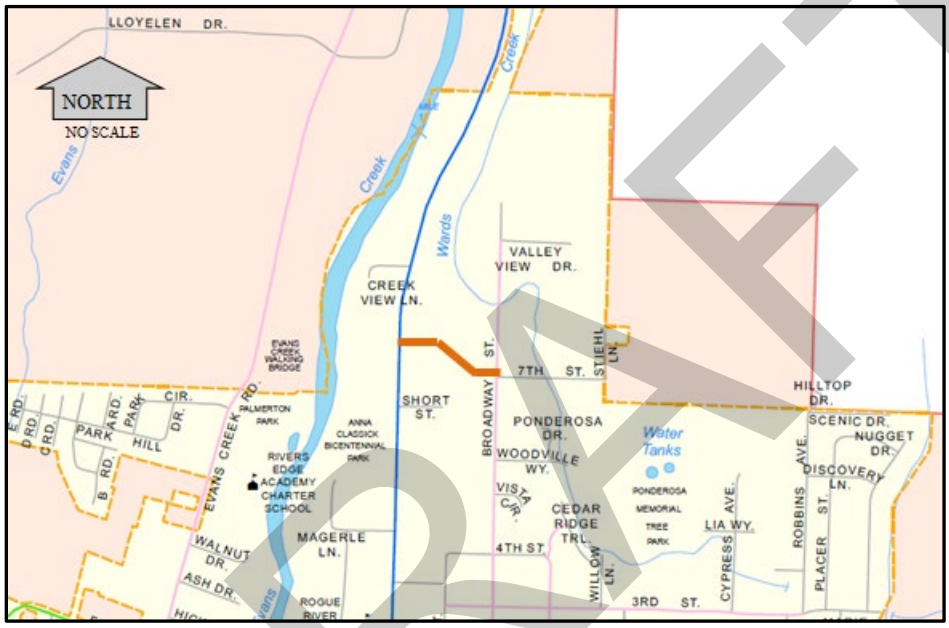
C7 7th Street Extensions

Deficiency: 7th Street should be extended in both directions, past Ponderosa Park to Tenney Drive (use Scenic Drive), past Evans Creek.

Improvement Option A: Extend 7th Street from Broadway Street to Pine Street

Description: Extend 7th Street from Broadway Street west to Pine Street. This extension would include two 12' travel lanes; six foot sidewalks, and six foot bike lanes.

Vicinity Map



Benefits: This would create connections and an alternate route for all modes. This would ease the vehicular demand placed on East Main Street**.** This creates alternate routes for emergency vehicles and improves emergency response times.

Preliminary Cost Estimate: $2,158,000

Key Considerations/Impacts: This is the highest scoring 7th Street option which could substantially reduce out-of-direction travel between Broadway and Pine Streets. This could create additional parking. The extended street will require additional right-of-way, a large consideration requiring property impacts. This creates a grid or connection from Broadway Street to Pine Street, possibly lessening the traffic that uses Main Street at the intersections of these streets.

C10 Code Updates

Deficiency: Future city code should require connectivity or two points of entry into a development from different streets. Entry points to be reviewed for connectivity and safety.

Improvement Option A: Don't allow self-centered developments

Description: Prohibit cul-de-sac style developments in the future. Create grid-style connectivity by connecting to more than one intersection or roadway location.

Benefits: This would help reduce excess miles traveled for all modes and time in emergency responses, and overall congestion.

Key Considerations/Impacts: It is hoped that this requirement will lead to more connectivity and facilities for all modes.

Improvement Option B: Require developments to not place homes at the end of a roadway stub

Description: Allow for future connectivity by not placing homes or other structures at the end of a roadway stub**.**

Benefits: This would enable the possibility of a future extension of that roadway.

Key Considerations/Impacts: It is hoped that this requirement will lead to more connectivity and facilities for all modes over time by not precluding potential locations. Better connectivity creates alternate routes for emergency vehicles and better response times.

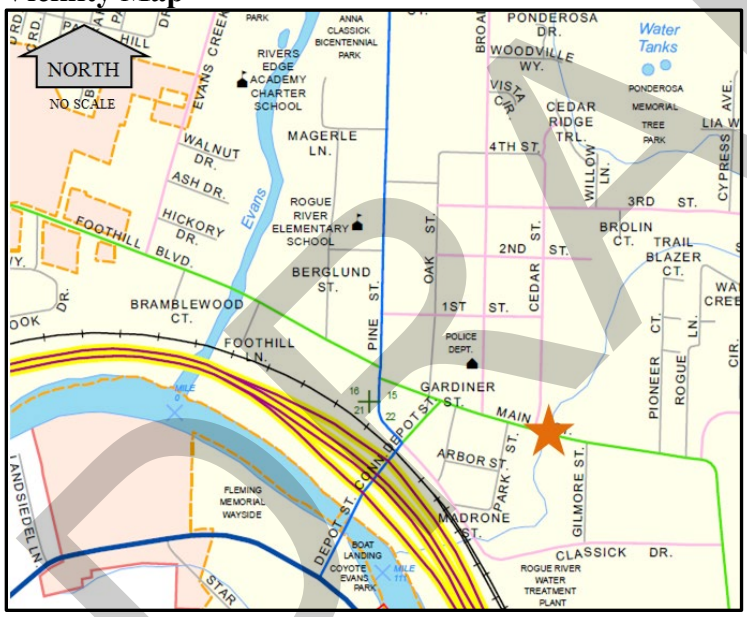
Bridge Projects

Table 22: Bridge Projects

Project #	Description	Agency	Cost	Score
BR2-B	Classick Dr over Wards Creek: Construct parallel pedestrian/bicycle bridge	City	$91,000	11.3
BR1-B	Main St over Wards Creek: Construct parallel pedestrian/bicycle bridge	City	$203,000	9.4
BR3	I-5 over Depot St: Seismic retrofit	ODOT	$4,900,000	-0.7
BR4	I-5 over Evans Creek: Seismic retrofit	ODOT	$14,200,000	-2.1
BR5	I-5 over Foothills Blvd: Seismic retrofit	ODOT	$26,000,000	-2.1

Improvement Option BR1-B: Main Street bridge across Ward Creek: Build parallel pedestrian/bicycle bridge

Vicinity Map



Description: Build a minimum 8' wide parallel structure to Main Street for bicycle and pedestrian use only over Ward Creek. The Main Street bridge across Ward Creek is in part functionally outdated as it requires bicycles and vehicles to share a lane on the structure.

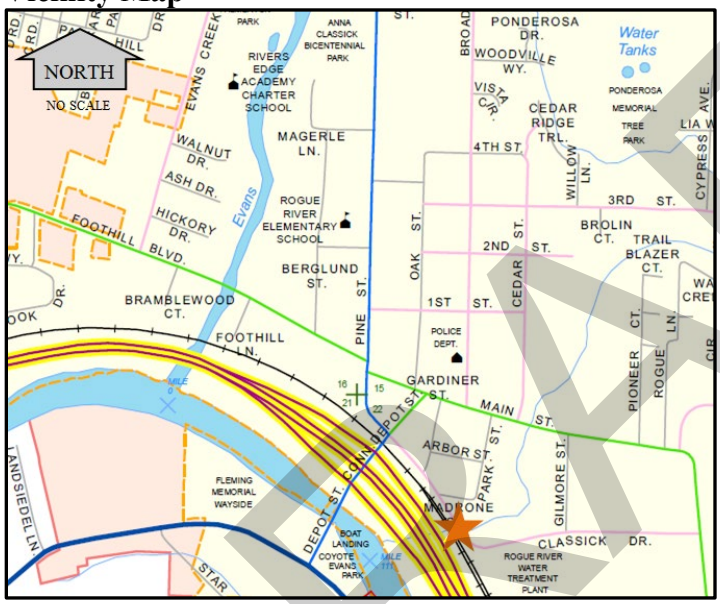
Benefits: This would give pedestrians and bicyclists their own separated location away from motor vehicle traffic which will improve comfort, safety and use. Younger and less confident riders would prefer a separated location instead of having to mix with vehicles or pedestrians.

Preliminary Cost Estimate: $203,000

Key Considerations/Impacts: Pedestrians would be relatively unchanged as they could still use the sidewalks. More confident and stress-tolerant bicyclists may still continue to use the vehicle lanes as the structure is short. Additional right-of-way will be required, impacting adjacent properties. Bridge construction will impact the banks and may have fish passage considerations.

Improvement Project BR2-B: Classick Drive bridge across Ward Creek: Build parallel pedestrian/bicycle bridge

Vicinity Map



Description: Build a minimum 10' wide parallel structure to Classick Drive for bicycle and pedestrian use only over Ward Creek. The Classick Drive bridge across Ward Creek is in part functionally outdated as it requires pedestrians, bicyclists, and motorists to share a lane on the structure. There should be a similar bridge paralleling this bridge to provide crossing for pedestrians and bicyclists.

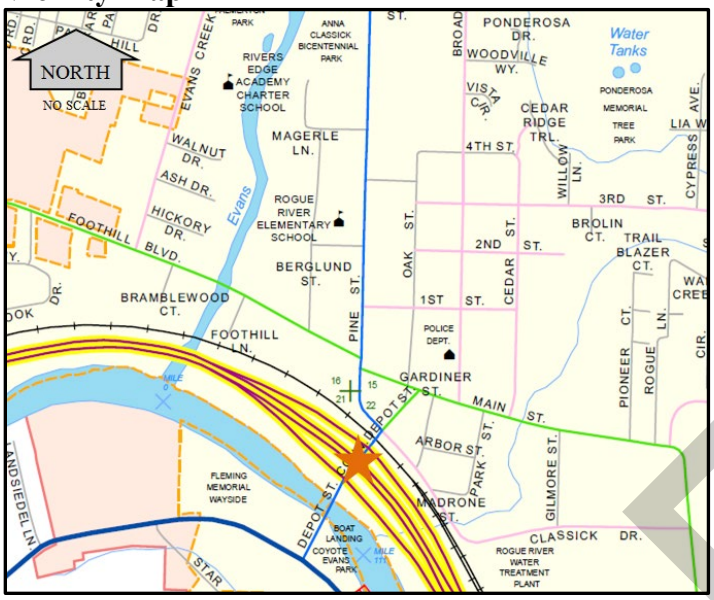
Benefits: This would give pedestrians and bicyclists their own separated location away from motor vehicle traffic which will improve comfort and safety at this pinch point.

Preliminary Cost Estimate: $91,000

Key Considerations/Impacts: Full benefit of the new structure will not be realized until bike and pedestrian facilities are built along Classick Drive. Additional right-of-way will be required, impacting adjacent properties. Bridge construction will impact the banks and may have fish passage considerations.

Improvement Option BR3: I-5 Depot St overcrossing retrofit

Vicinity Map



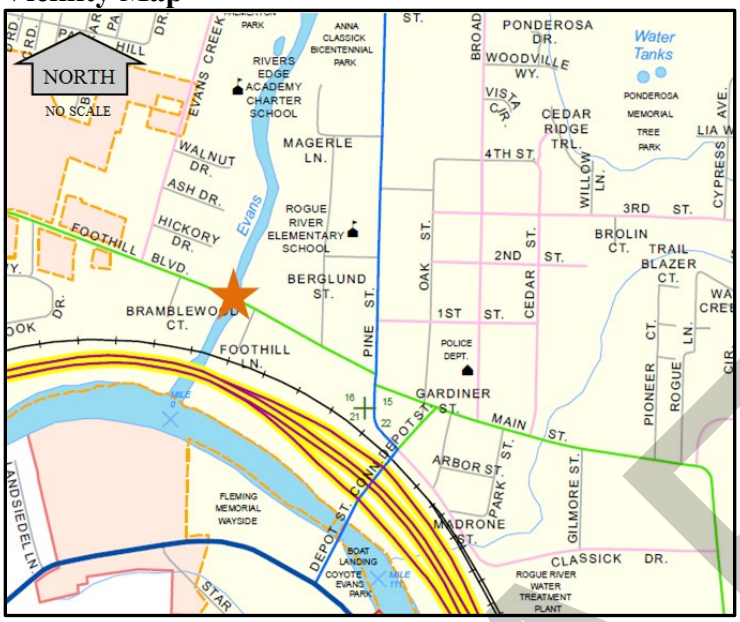
Description: Retrofit the bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP) or a separate refinement plan.

Preliminary Cost Estimate: $4,900,000

Key Considerations/Impacts: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine. The city should identify roadway cross-sections using these bridges to ensure that future bridge over-crossings/under-crossings are compatible.

Improvement Option BR4: I-5/Evans Creek overcrossing retrofit

Vicinity Map



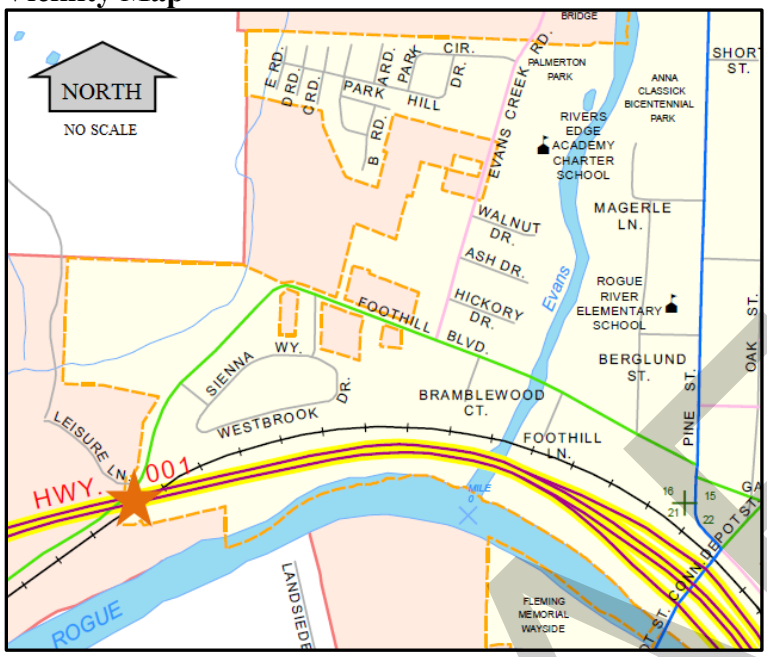
Description: Retrofit bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP), a separate refinement plan.

Preliminary Cost Estimate: $14,200,000

Key Considerations/Impacts: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine.

Improvement Option BR5: I-5/Foothills Blvd overcrossing retrofit

Vicinity Map



Description: Retrofit bridge to address seismic vulnerability. General design parameters should be investigated as part of an Interchange Area Management Plan (IAMP), a separate refinement plan and/or a special engineering study.

Preliminary Cost Estimate: $26,000,000

Key Considerations/Impacts: Requires IAMP, refinement plan, and/or special engineering study to determine general and refined design details. May be more cost effective to replace but it will take an engineering study to determine. The city should identify roadway cross-sections using these bridges to ensure that future bridge over-crossings/under-crossings are compatible.

Notes: Seismic retrofit estimates are based on a generic structure from Region 3 Bridge Section and are only preliminary estimates.

The City will continue to work with ODOT to identify bridge needs on I-5.

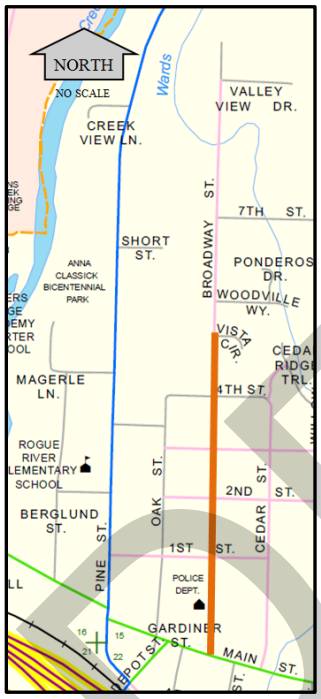
Pavement Projects

Table 23: Pavement Projects

Project #	Description	Agency	Cost	Score
PV2	Depot St : Crack seal & seal coat treatment	City/ODOT	$27,000	3.7
PV1	Broadway St: Crack seal treatment	City	$66,000	3.3
PV3	Wards Creek Rd: Crack seal & seal coat treatment	City	$90,000	3.3
PV4	Foothill Blvd: Crack seal treatment	City	$36,000	3.3
PV5	OR99: Resurface pavement with overlay	ODOT	$1,330,000	2.6

Improvement Project PV1: Broadway Street Resurfacing

Vicinity Map



Description: Resurface Broadway Street with a crack seal treatment. This is 50% done.

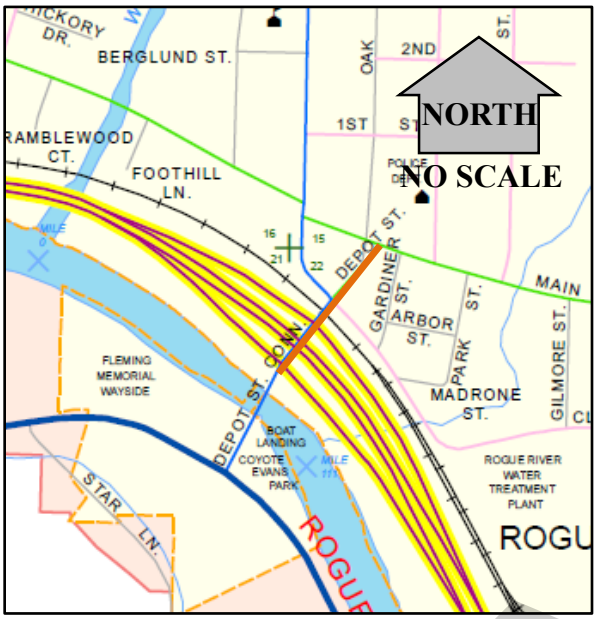
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $66,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer. Consider combining with B5 when replacing striping.

Improvement Project PV2: Depot Street Resurfacing

Vicinity Map



Description: Resurface alligator cracking. This includes crack seal and seal coat.

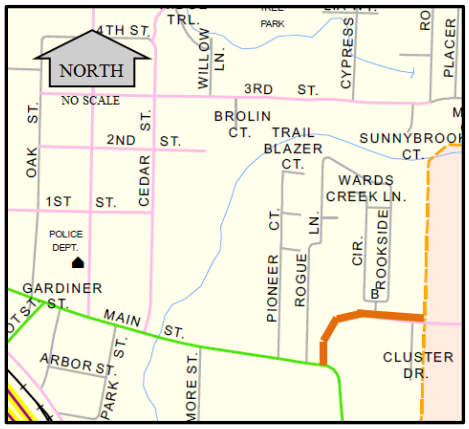
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $27,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer. Consider doing this project concurrently with OS4F or OS3-D.

Improvement Project PV3: Wards Creek Road Resurfacing

Vicinity Map



Description: Resurface alligator cracking. This includes crack seal in lower section and seal coat upper section.

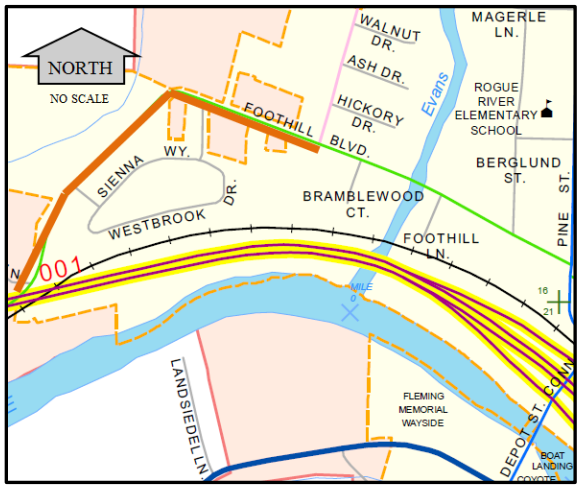
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $90,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer.

Improvement Project PV4: Foothill Boulevard Resurfacing

Vicinity Map



Description: Resurface minor cracking. This includes crack seal.

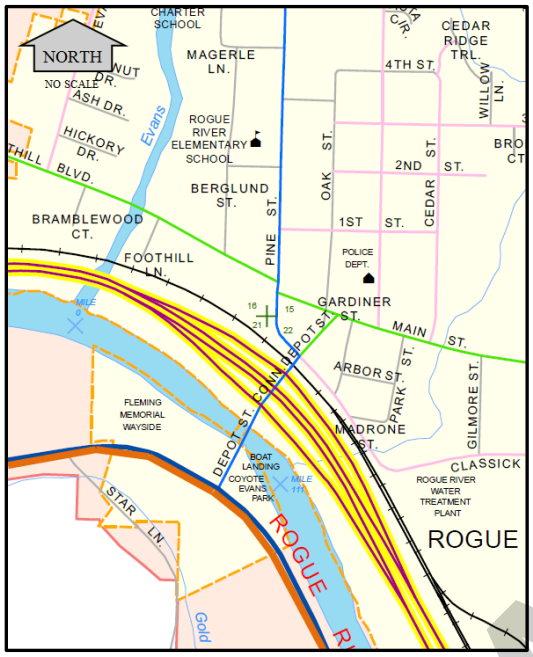
Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $36,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer.

Improvement Project PV5: OR99 Overlay

Vicinity Map



Description: Resurface with an overlay for 5500 feet.

Benefits: This would provide a smoother surface to ride on and allow the driver to focus on the road ahead and those sharing the road.

Preliminary Cost Estimate: $1,330,000

Key Considerations/Impacts: This will make the traveling surface for bicycle and vehicle modes smoother and safer. Consider combining with Project B9-A to minimize costs. ODOT relies on its maintenance schedule and ODOT Pavement Services to identify and approve large STIP level paving jobs. The City will continue to work with ODOT to identify paving needs on OR 99.

Next Steps

RVCOG staff will take the final project rankings along with the funding forecast and create the fiscally constrained (20-year) preferred project list including projected project timing (short/medium/long-term). All other projects are assumed to be on the illustrative list. ODOT staff will then take the preferred project list and develop summary project sheets for each for inclusion in the draft TSP.

Section 9 – Municipal Code

The municipal code must ensure that the TSP can be implemented and facility and corridor function can be protected. Coordination of land use and the transportation system must also be ensured. The Code must include the following:

a. Access management ordinances and policies such as driveway and public road spacing, median control and signal spacing standards.

b. Standards to protect future operations of roads and transit corridors.

c. Regulations ensuring safe and convenient bicycle facilities and sidewalks.

d. Parking Policies and Standards.

d. A process for agency notification and coordinated review of future land use decisions affecting transportation facilities.

e. Regulations ensuring that amendments to land use designations, densities, and design standards are consistent with function, capacity and level of service facilities.

Current Code Provisions

The letter in the parenthesis reflects from the list above.

17.10.100 Traffic impact analysis (TIA). (e)

The purpose of this section is to implement OAR 660-012-0045(2)(e), the State Transportation Planning Rule, requiring cities to adopt a development review process which minimizes transportation impacts and protects transportation facilities.

A. Traffic Impact Analysis. The city shall require a traffic impact analysis (TIA) as part of an application for development, a change in use, or a change in access in the following situations:

1. If the application includes residential development, a TIA shall be required when the land use application involves one or more of the following actions:

a. A change in zoning or a plan amendment;

b. An increase in site traffic volume generation by 250 average daily trips or more;

c. An increase in peak hour volume of a particular movement to and from the state highway by 20 percent or more; or

d. An increase in use of adjacent streets by vehicles exceeding the 20,000 pounds gross vehicle weights by 10 vehicles or more per day;

2. If the application does not include residential development, a TIA shall be required when a land use application involves one or more of the following actions:

a. A change in zoning or a plan amendment designation;

b. Any proposed development or land use action that a road authority, including the city, Jackson County or ODOT, states may have operational or safety concerns along its facility(ies);

c. An increase in site traffic volume generation by 250 average daily trips (ADT) or more;

d. An increase in peak hour volume of a particular movement to and from the state highway by 20 percent or more;

e. An increase in use of adjacent streets by vehicles exceeding 20,000 pounds gross vehicle weight by 10 vehicles or more per day;

f. The location of the access driveway does not meet minimum sight distance requirements, as determined by the city engineer, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the state highway, creating a safety hazard in the discretion of the city planner; or

g. A change in internal traffic patterns that, in the discretion of the city planner, may cause safety problems, such as back-up onto a street or greater potential for traffic accidents.

B. Traffic Impact Analysis Preparation. A traffic impact analysis shall be prepared by a traffic engineer or civil engineer licensed to practice in the state of Oregon with special training and experience in traffic engineering. The TIA shall be prepared in accordance with the public works department's document entitled "Traffic Impact Analysis." If the road authority is the Oregon Department of Transportation (ODOT), consult ODOT's regional development review planner and OAR 734-051-180. [Ord. 08-355-O § 9; Ord. 373 § 2.100, 1982].

12.10.020 Construction of sidewalks. (c)

Sidewalks constructed to current standards shall be required along the street frontage of all building sites. Where a building site fronts an unimproved street, the requirement may be deferred if the adjacent property does not have existing sidewalks. All proposed building sites, including all single-family residences, along arterial streets shall have sidewalks. Industrial parks are not required to have sidewalks, except along arterial streets. [Ord. 07-343-O § 2].

12.10.030 Standards for public works construction in the city of Rogue River. (b)

Except as otherwise provided by ordinance, the following are hereby adopted as the minimum design, construction and repair standards for all streets, sidewalks, driveways, storm drain facilities, street lighting, and other public facilities in the city:

A. “Oregon Standard Specification for Construction,” 2002 Edition, published by Oregon Chapter of the American Public Works Association and Oregon Department of Transportation;

B. “Oregon Standard Drawings,” 2002 Edition, published by Oregon Chapter of the American Public Works Association and Oregon Department of Transportation. [Ord. 07-343-O § 3].

12.10.040 Permit for sidewalk work. (c)

A. Before beginning sidewalk construction, reconstruction or repair, an application shall be submitted to the city for an encroachment permit. If the proposed sidewalk conforms to the provisions of RRMC 12.10.030, the city shall issue the encroachment permit upon payment of the appropriate permit fee.

B. No person shall construct, alter or repair a sidewalk within the city without first making application for a permit and submitting the plans and specifications for the proposed work. Said application shall be made to the city, and all applicable standards and specifications established under RRMC 12.10.030 shall be met by said plans, and thereafter the public works director may issue a permit for the proposed work. [Ord. 07-343-O § 4].

12.10.050 Sidewalk construction requested by the property owner. (c)

Upon the petition and request of a property owner, the city council may order the construction of a requested sidewalk on the following conditions:

A. The city council determines that the sidewalk construction is in the public interest;

B. The property owner pays the costs of construction or makes application to pay the costs in installments as provided by the Bancroft Bonding Act (ORS 223.205 through 223.300);

C. The property owner waives the right to service and publication of notice; and

D. The property owner consents to the assessment of owner’s property abutting the sidewalk. [Ord. 07-343-O § 5].

16.20.120 Street standards. (c)

A. General. The street location, width, and grade shall be designed and developed to assure an adequate transportation system that provides for the public convenience and safety, taking into consideration traffic levels and terrain. The arrangement of streets shall either:

1. Provide for the continuation of existing principal streets in the surrounding area; or

2. Conform to a master plan for the neighborhood approved by the city; or

3. Conform to an approved future development plan.

B. Minimum Rights-of-Way and Roadway Widths.

Rogue River Street Design Standards

Functional Class	Right-of-Way Width	Pavement Width	Travel Lane Width	Center Turn Lane/ Median Width	Bicycle Lane Width	Parking Lane Width	Planter Width	Sidewalk Width
Arterial Street A[1]	60 – 80'	50 – 64'	12'	12'	5 – 6'	8'	4 – 6'	4 – 6'
Arterial Street B[2]	60 – 80'	36 – 48'	12'	12'	6'	None	None	6'
Collector Street	60 – 80'	50 – 64'	12'	12'	5 – 6'	8'	4 – 6'	4 – 6'
Local Street	46 – 60'	34 – 38'	10 – 11'	None	None	7 – 8'	4 – 6'	4 – 6'
Alley	20'	15 – 20'	15 – 20'	None	None	None	None	None
Pathway	10'	4 – 10'	None	None	–	None	None	–

1. East Main Street, West Main Street, Depot Street, Pine Street.

2. East Evans Creek, West Evans Creek, Foothill Boulevard, North River Road, Wards Creek Road, Rogue River Highway.

3. Cul-de-Sacs. Radius for turn-around at the end of cul-de-sacs shall have a minimum right-of-way width of 40 feet and a minimum roadway width of 28 feet.

4. Private driveways accessing city streets shall have a minimum width of 12 feet, and shall be paved with asphaltic concrete, concrete or a permeable rock material approved by the city. Where physical conditions, particularly topography or the size and shape of the tract, make it impractical to otherwise provide buildable sites or less than adequate rights-of-way, the matter shall be submitted for determination, using the variance procedure in Chapter 16.50 RRMC.

C. Reserve Strips. Reserve strips or street plugs controlling access to streets shall be approved where necessary for the protection of the public welfare or of substantial property rights. The control and disposal of the land comprising such strips shall be placed within the jurisdiction of the city under conditions approved by the city council.

D. Alignment. As far as is practical, streets shall be in alignment with existing streets by continuations of the centerlines thereof. Staggering of streets making "T" intersections at collectors and arterials shall not be designed so that jogs of less than 300 feet on such streets are created, as measured from the centerline of the street intersections.

E. In order to promote efficient vehicular and pedestrian circulation throughout the city, the design of subdivisions and alignment of new streets shall conform to the following standards. The maximum block length shall not exceed:

1. Six hundred feet in residential districts;

2. Four hundred feet in commercial districts; and

3. Not applicable to industrial districts.

Exceptions to the above standards may be granted when an accessway is provided at or near mid-block.

F. Spacing between local street intersections shall have a minimum separation of 125 feet, except where more closely spaced intersections are designed to provide an open space, pocket park, common area or similar neighborhood amenity. This standard applies to four-way and three-way (offset) intersections.

G. Minor collector and local residential streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods and facilitate emergency access and evacuation. Appropriate design and traffic control such as four-way stops and traffic calming measures are the preferred means of discouraging or minimizing through traffic.

H. Development Adjoining Arterial Streets. Where development adjoins or is crossed by an existing or proposed arterial street, the development design shall separate residential access from through traffic and shall minimize traffic conflicts. The design shall include one or more of the following transportation elements:

1. A parallel access street along the arterial with a landscape buffer separating the residential and through streets;

2. Deep through lots abutting an arterial or major collector to provide adequate buffering with frontage along a residential street. Through lots shall conform to the buffering standards in RRMC 16.20.040;

3. Screen planting at the rear or side property line should be contained in a non-access reservation or reserve strip along the arterial; or

4. Other treatment suitable to meet the objectives of this subsection;

5. If a lot has access to two streets with different classifications, primary access shall be from the lower classification street.

I. Proposed streets or street extensions shall be located to provide direct access to existing or planned commercial services and other neighborhood facilities, such as schools, shopping areas and parks.

J. Future Extensions of Streets. Where necessary to give access to or to divide adjoining land, streets shall be extended to the boundary of the subdivision or partition. The resulting dead-end streets may be approved with a temporary turn-around. Reserve strips and street plugs may be required to preserve the objective of street and utility extensions.

K. All local and collector streets which abut a development site shall be extended within the site to provide through circulation unless prevented by environmental or topographical constraints, existing development patterns or compliance with other standards in this code. This exception applies when it is not possible to redesign or reconfigure the street pattern to provide required extensions. Land is considered topographically constrained if the slope is greater than 15 percent for a distance of 250 feet or more. In the case of environmental or topographical constraints, the mere presence of a constraint is not sufficient to show that a street connection is not possible. The applicant must show why the environmental or topographic constraint precludes some reasonable street connection.

L. Accessways.

1. Accessways for pedestrians and bicyclists shall be 10 feet wide and located within a right-of-way or easement. If the streets within the subdivision are lighted, the accessways shall also be lighted. Stairs or switchback paths may be used where grades are steep.

2. Accessways for pedestrians and bicyclists shall be provided at mid-block where the block is longer than 600 feet.

3. The city may determine, based upon evidence in the record, that an accessway is impracticable. Such evidence may include but is not limited to:

a. Physical or topographic conditions make an accessway connection impractical. Such conditions include but are not limited to freeways, railroads, extremely steep slopes, wetlands, or other bodies of water where a connection cannot reasonable be provided.

b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future, considering the potential for redevelopment.

c. Where accessways would violate provisions of easements, covenants, restrictions, or other agreements existing as of May 1, 1995, that preclude a required accessway connection.

Potential Additions

Need to add provision permitting routine maintenance and improvements in right-of-way. Cave Junction added this language:

17.12.110 - Transportation facilities, services and improvements.

A. The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the transportation system plan and, under ordinary circumstances do not have a significant impact on land use:

   1. Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals;

   2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;

   3. Reconstruction or modification of public roads and highways, including the placement of utility facilities overhead and in the subsurface of public roads and highways along the public right-of-way, but not including the addition of travel lanes, where no removal or displacement of buildings would occur, or no new land parcels result;

   4. Temporary public road and highway detours that will be abandoned and restored to original condition or use at such time as no longer needed.

B. To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment.

Agency notice already included for Type II, III, and IV decisions. Sections 16.10.060(B), 16.10.070(B), 16.10.080(B). (d)

CJ 17.14.540 - Transportation planning rule compliance. (e)

A. When a development application includes a proposed comprehensive plan amendment or land use district change, the proposal shall be reviewed to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012-0060. Significant means the proposal would:

   1. Change the functional classification of an existing or planned transportation facility. This would occur, for example, when a proposal causes future traffic to exceed the capacity of "collector" street classification, requiring a change in the classification to an "arterial" street, as identified by the transportation system plan;

2. Change the standards implementing a functional classification system;

3. Allow types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or

4. Reduce the level of service of the facility below the minimum acceptable level identified in the transportation system plan.

B. Amendments to the comprehensive plan and land use standards which significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the transportation system plan. This shall be accomplished by one of the following:

1. Limiting allowed land uses to be consistent with the planned function of the transportation facility;

2. Amending the transportation system plan to ensure that existing, improved, or new transportation facilities are adequate to support the proposed land uses consistent with the requirement of the transportation planning rule; or,

3. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes of transportation.

Section 10 – Parking

Overview

The purpose of this Chapter is to provide basic and flexible standards for development of vehicle and bicycle parking. The design of parking areas is critically important to the viability of some commercial areas, pedestrian and driver safety, the efficient and safe operation of adjoining streets, and community image and livability. Historically, some communities have required more parking than is necessary for some land uses, paving extensive areas of land that could be put to better use. Because vehicle-parking facilities can occupy large amounts of land, they must be planned and designed carefully to use the land efficiently while maintaining the visual character of the community. This Chapter recognizes that each development has unique parking needs by providing a flexible approach for determining parking space requirements. This Chapter also provides standards for bicycle parking because many people use bicycles for recreation, commuting, and general transportation. Children as well as adults need safe and adequate spaces to park their bicycles throughout the community.

Oregon's Transportation Planning Rule (TPR) requires that metropolitan area jurisdictions reduce their overall parking capacity. Parking reduction strategies are proposed to help the metropolitan area meet the TPR requirements. Strategies include changes to parking codes and policies, re-designation of existing parking, and management of roadway space. Next, some potential results are discussed (limited data availability). Finally, some parking optimization techniques are presented, which may make it easier for motorists, employers, and employees to make use of available parking.

Parking Standards

Location. Vehicle parking is allowed only on approved parking shoulders (streets), within garages or carports (no temporary or tarp carports are allowed), or on driveways or parking lots that have been developed in conformance with this code.

Off-site parking. Except for single-family dwellings, the vehicle parking spaces required by this Chapter may be located on another parcel of land, provided the parcel is within 500 feet of the use it serves. The distance from the parking area to the use shall be measured from the nearest parking space to a building entrance, following a sidewalk or other pedestrian route. The right to use the off-site parking must be evidenced by a recorded deed, lease, easement, or similar written instrument.

Mixed uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (i.e., the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly as approved by the Planning Director.

Shared parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or

operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use.
Availability of facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers and/or employees, as applicable.

The TPR requires implementation of a parking plan that achieves a 10 percent reduction in the number of parking spaces per capita in the MPO area over the planning period. This may be accomplished through a combination of restrictions on development of new parking spaces and requirements that existing parking spaces be redeveloped to other uses.

Ultimately, the parking plan must aid in achieving the overall requirement to reduce vehicle miles traveled per capita (VMT) in the MPO area. In MPO areas of less than 1 million population, including the MRMPO, which Rogue River is a part of, a 5 percent VMT reduction is required.

It is anticipated that metropolitan areas will accomplish reduced reliance by changing land use patterns and transportation systems so that walking, cycling, and use of transit are highly convenient and so that, on balance, people need to and are likely to drive less than they do today.

The requirement to reduce VMT as it relates to parking offers some options. Local jurisdictions may set minimum and maximum parking standards in appropriate locations, such as downtowns, designated regional or community centers, and transit centers.

Parking Code and Policy Changes

Older parking regulations specified only minimum standards, and some developments, such as retail stores, to provide an excess of parking. The City of Rogue River has bike parking standards. Rogue River's parking standards allow for the applicant to set the number of parking spaces for their development, as long as minimum standards are met, which in hard economic times, will likely result in fewer spaces than most codes would require.

Lower Minimum Parking Requirements

Lower parking minimums could have an impact on the total parking inventory, but there is no guarantee that developers would choose fewer parking spaces for their developments. Lower minimum parking requirements, however, might encourage some in-fill development. In-fill development can be encouraged to increase densities and remove land from its temporary status as parking lots. Both the reduction of existing parking and increasing building densities will help lead to a more pedestrian friendly environment and encourage transit ridership – a primary goal of the TPR.

Parking Fees

Fees imposed on developers for each parking space are an indirect way of reducing the amount of parking provided by new developments. Fees can be levied on the developer, the tenant, or the end-user. These are fees for either the use or provision of each parking space. Fees levied on the developer may lead to smaller parking lots due to monetary considerations when building the

project. Fees on the tenant may encourage them to seek out retail or office space in areas with smaller lots, thus putting market pressure on developers to build with less parking. Fees on end-users may result in different modal choices, bringing down parking demand and leaving land open for in-fill development or smaller parking facilities. Fees are an indirect strategy and may be difficult or impossible to implement as a stand-alone TPR-compliance parking reduction measure. Rogue River does not use parking fees as a strategy to reduce the number of parking spaces.

Re-designation of Existing Parking

Changing existing general-use parking spaces to special-use parking can be used to promote the use of alternative modes and meet the requirements of the TPR. General parking provided on-street or in lots could be reclassified as preferential parking for carpools, or the handicapped. Preferential parking, especially close to building entrances, for carpooling or vanpooling is a common way of helping to promote these as alternatives to driving alone. Carpool parking need not be limited to parking lots. On-street parking spaces, including metered spaces, may be restricted to carpools. Typically, monthly permits are obtained and displayed when parked in a reserved carpool space in a lot or on the street.

As a side benefit, reclassification from general parking to carpool parking may help meet TPR requirements. Under TPR definitions, park and ride lots, handicapped parking and parking spaces for carpools and vanpools are not considered parking spaces for purposes of the TPR. The reclassification of a portion of the parking supply as permanent high occupancy vehicle (HOV) space may satisfy the TPR's parking reduction requirement.

In areas where easy access to free or low-cost parking has always been readily available, restrictions on parking may be poorly received by the public. Widespread conversion of general-use parking spaces to reserved parking for carpools or other restricted uses may lead to a high level of parking violations. This may place an undue burden on agencies for the enforcement of parking regulations at the expense of other activities.

Management of Roadway Space

There is considerable competition for use of the paved roadway space: through lanes and turn lanes for motor vehicles, bicycle lanes, on-street parking spaces, loading zones, and bus stops. Management of the roadway space and the allocation for these uses can have a measurable impact on the amount of parking in the region. Changing parking spaces to travel lanes can help improve traffic flow, promote use of alternative modes, and meet the TPR requirements.

Parking and Bike Lanes

Required bicycle parking shall comply with the following standards:

1. **Standards for all bicycle parking.** These standards ensure that required bicycle parking is designed so that bicycles may be securely locked without undue inconvenience and will be reasonably safeguarded from intentional or accidental damage.

a. Where required bicycle parking is provided in lockers, the lockers must be securely anchored.

b. Required bicycle parking may be provided in floor, wall, or ceiling racks. Where required bicycle parking is provided in racks, the racks must meet the following standards:

i. The bicycle frame and one wheel can be locked to the rack with a high security, U-shaped shackle lock if both wheels are left on the bicycle. Staple-design steel racks are recommended.

ii. A bicycle six feet long can be securely held with its frame supported so that the bicycle cannot be pushed or fall in a manner that will damage the wheels or components.

iii. The rack must be securely anchored.

c. Each required bicycle parking space must be accessible without moving another bicycle.

d. There must be an aisle at least 5 feet wide behind all required bicycle parking to allow room for bicycle maneuvering. Where the bicycle parking is adjacent to a sidewalk, the maneuvering area may extend into the right-of- way.

e. The area devoted to bicycle parking must be hard surfaced.

2. **Additional standards for short-term bicycle parking.** Short-term bicycle parking encourages shoppers, customers, messengers, and other visitors to use bicycles by providing a convenient and readily accessible place to park bicycles. Short-term bicycle parking should serve the main entrance of a building and should be visible to pedestrians and bicyclists. Required short-term bicycle parking shall meet the following standards in addition to the standards in Subsection (a) above:

a. Short-term bicycle parking shall be provided in lockers or racks.

b. Short-term bicycle parking shall be located outside a building and at the same grade as the sidewalk or at a location that can be reached by an accessible route.

c. Bicycle parking may be located anywhere on the site, provided it is visible from a primary building entrance and is no further from the primary building than the furthest vehicle parking area.

d. If there are multiple primary building entrances, bicycle parking should be dispersed so that bicycle parking facilities are visible from each primary building entrance.

e. Each required short-term bicycle parking space must be at least 2 feet by 6 feet.

f. Required short-term bicycle parking spaces must be available for shoppers, customers, messengers, and other visitors to the site.

3. **Additional standards for long-term bicycle parking.** Long-term bicycle parking provides employees, students, residents, commuters and others who generally stay at a site for several hours, a secure and weather-protected place to park bicycles. Although long-term parking does not have to be provided on-site, the intent of these standards is to ensure bicycle parking is within a reasonable distance in order to encourage bicycle use. Required long-term bicycle parking shall meet the following standards in addition to the standards in Subsection (a) above

a. Long-term bicycle parking must be provided in racks or lockers.

b. Long-term bicycle parking must be located on the site or in an off-site area where the closest point is within 500 feet of the site. If provided off-site, the standards of Subsection 133.070 shall be met.

c. At least 50 percent of required long-term bicycle parking shall be covered. Covered bicycle parking can be provided inside buildings, under roof overhangs or awnings, in bicycle lockers, or within or under other structures. Where required covered bicycle parking is not within a building or locker, the cover shall be:

i. Permanent.

ii. Designed to protect bicycles from rainfall.

iii. At least 7 feet above the floor or ground.

d. To provide security, long-term bicycle parking shall be in at least one of the following locations:

i. A locked room or storage container.

ii. An area that is enclosed by a fence with a locked gate. The fence shall be either 8 feet high, or be floor-to-ceiling.

iii. Within view of an attendant or security guard.

iv. Within 100 feet of an attendant or security guard.

v. An area that is monitored by a security camera.

vi. An area that is visible from employee work areas.

e. Required long-term bicycle parking spaces must be available for employees, students, residents, commuters, and others who stay at the site for several hours.

Parking and Turn Lanes

Re-striping for turn lanes is a transportation system management strategy that can be used to increase the capacity of intersections. In many cases, queuing distances at stop signs or traffic signals will require that no-parking zones be extended for more than 100 feet from the intersection. This could require removal of parking, which is sometimes permitted as close as 20 feet from a crosswalk at an intersection.

No-Parking Zones

Designating larger no-parking zones to increase sight distances at intersections is already implied in the vehicle code. Parking is not permitted within 50 feet of a stop sign, yield sign, or other traffic control device where such parking hides it from view. A blanket prohibition on parking within 50 feet of a corner would have a measurable impact on the number of parking spaces and would have other benefits related to sight distance.

Street Standards

Adopting new street standards for residential streets could include reducing street width to the extent that on-street parking would be permitted only on one side or eliminated.

Parking Optimization

There are techniques that can be used to make better use of parking, which may make it easier for residents, businesses, and employees to "live with" the parking reduction requirements of the TPR. However, optimizing the use of parking may defeat the other goal of the TPR, namely the reduction in per capita vehicle miles of travel. This is because the easy availability of free or low-cost parking remains a significant factor in the individual's choice of mode for trips to work, shopping, etc.

Shared Parking

Shared parking is the use of one or more parking facilities between developments with similar or different land uses. Each land use experiences varying parking demand depending on the time of day and the month of the year. It is possible for different land uses to pool their parking resources to take advantage of different peak use times.

Traditionally, parking lots have been sized to accommodate at least 90 percent of peak hour and peak month usage and serve a single development. For the most part, these lots are operating at a level considerably less than this amount. Shared parking schemes allow these uses to share parking facilities by taking advantage of different business peak parking times.

For example, a series of buildings may include such land uses as restaurants, theaters, offices, and retail – all of which have varying peak use times. A restaurant generally experiences parking peaks from 6 to 8 p.m., while offices typically peak around 10 a.m. and again around 2 p.m. on weekdays. Some retail establishments have their peak usage on weekends. Theaters often peak from 8 to 10 p.m. Without a shared parking plan, these uses would develop parking to serve each of their individual peaks. This generally results in each lot being heavily used while the other lots operate at far less than capacity. Depending upon the combination of uses, a shared parking plan may allow some developments to realize a parking reduction of 10-15 percent without a significant reduction in the availability of parking at any one time. This is possible due to the different peak periods for parking.

Some of the major obstacles to implementing shared parking schemes are the codes of local jurisdictions themselves. Quite often, parking codes are written to express parking minimums as opposed to maximums. In some cases, the implementation of shared parking strategies may require changes to the minimum parking requirements contained in the parking policies of the metropolitan area jurisdictions.

Other issues surrounding shared parking are liability, insurance, and the need for reciprocal access agreements allowing patrons of one establishment to cross land owned by another. Rogue River allows for shared parking with Planning Commission approval.

Parking Management

Parking management and parking management associations (PMAs) are mechanisms that can facilitate shared parking among non-adjacent land uses by providing off-site central parking facilities. These facilities can be large parking structures or surface lots. Parking management can employ a wide range of techniques that will result in the efficient use of existing parking facilities. These include facilities like short-term on-street parking, medium-term nearby lot parking, High Occupancy Vehicle (HOV) priority parking, and long-term parking.

PMAs are entities responsible for conducting this management and providing access to resources that will ease the burden on the parking supply. Often PMAs are non-profit groups supported by retail or business district associations. PMAs can incorporate such programs as providing bus passes or tokens in lieu of parking validation, delivery services, shuttle buses from remote lots, clear and consistent signage for parking facilities, etc.

An effective PMA benefits its members and its district by functionally increasing the parking supply for all uses and creating a parking plan that provides adequate parking for the area in a compact and coherent way. A PMA increases the efficiency of the use of land for parking, which helps reduce wasted space previously dedicated to underutilized parking. This, in turn, frees up land for further development. In the end, a successful PMA can create an area where parking is easier and more convenient, while using less land.

Section 11 – Transportation Financing Plan

Overview

Over 20 years, the City is expected to earn approximately $13,600,000 in transportation revenue (2019 dollars) assuming that existing funding sources remain stable and no new revenue streams are established. Accounting for ongoing expenses, the City can expect $3,672,000 in net revenue over the 20-year planning horizon of the TSP.

This TSP offers a menu of 58 projects that can be selected as funding sources become available or as adjacent improvements are made. Recognizing that current funding resources are not sufficient for implementing all of the city improvements, the project list was further divided into fiscally constrained improvements/projects, which have a reasonable likelihood of being funded with existing sources, and non-fiscally constrained improvements/projects, which would require new funding sources for implementation. 29 projects were identified as fiscally constrained. The result is approximately $13,781,000 in city-funded projects.

This section identifies and summarizes existing and potential future funding sources available for implementing the City of Rogue River Transportation System Plan (TSP). The funding information provides context for evaluating projects and defining priorities that will allow the City to utilize all available funding opportunities and maximize current resources to preserve and improve current infrastructure.

Financial Management Policies

The City of Rogue River has adopted financial management policies that seek to maintain a balanced relationship between debt service requirements and current operation costs, manage growth of the tax base, actively seek alternative funding sources, minimize interest costs, and maximize investment returns. In accordance with adopted budget polies, financial practices should assure that current revenue is sufficient to support current operating expenditures, while giving high priority to funding capital assets with one-time revenues. Adequate contingency reserves of no less than ten (10%) percent of the Street Fund shall be maintained for unforeseen expenditures. The proposed budget for 2018-2019 included $324,194 or 47.7% contingency reserves in the Street Fund. This contingency meets the City's Budget and Financial Policy. Care should be taken so that adequate reserves are maintained in the Street Fund. Grant funds should be actively pursued and used as much as possible for capital improvements, allowing revenue to build and avoiding increased indebtedness. Fees, related to Transportation and Street Maintenance, should be reviewed annually and grown at a rate that keeps pace with the cost of providing service. It is a specific goal of the City to propose and implement additional revenue streams to help fund street maintenance. As continued growth brings added burdens to existing streets, additional funding is needed to adequately maintain them.

Five Year Capital Improvement Program

The City of Rogue River has an adopted five year capital improvement program. Over the next five years (2019-2023) the City has outlined $1,396,000 in spending on street projects. The 2018-2019 proposed spending includes; $40,000 to install sidewalk from Lil' Pantry to Wards Creek Bridge, $55,000 to install storm drain along North River Road, $5,600 to install Third Street storm drain improvements, and $18,000 to install Broadway Street storm drain improvements. The 2019-2020 proposed spending calls for $24,000 for Pine Street storm drain improvements. In 2020-2021 proposed spending includes $321,000 on sidewalks along West Evans Creek Road and $75,000 towards the street funds share of a new public works shop. The 2021-2022 proposed spending calls for the second phase of a downtown revitalization project. The 2022-2023 proposed spending reflects $875,000 towards Pine and East Main Street Realignment and Signals.

Current and Historical Funding Sources

Key funding sources that have contributed to transportation improvement projects within the City of Rogue River over the last several years include the Surface Transportation Program, system development charges(SDCs), the City's Road Fund, and federal grants.

Overview of Local Government Special Revenue Funds

System Development Charges

The System Development Fund was established in accordance with State laws to account for System Development Charges related to water supply, treatment and distribution; wastewater collection, transmission, treatment and disposal; drainage and flood control and transportation. System Development Charges (SDC) are fees assessed on development for impacts created to public infrastructure. All revenue is dedicated to transportation capital improvement projects designed to accommodate growth. The City can offer SDC credits to developers that provide public improvements beyond the required street frontage, including those that can be constructed by the private sector at a lower cost. For example, an SDC credit might be given for providing end-of-trip bike facilities within the new development. The City of Rogue River is projected to receive $16,120 in the 2018-19 fiscal year in Street SDC funds. The proposed budget for 2018-2019 shows that there is $306,810 in contingency reserves for future capital improvements to the street system. Funds collected for Street SDC's are restricted to expenditure for transportation related capital improvement projects.

The Street Fund

The Street Fund is a special revenue fund which accounts for specific revenue sources that are legally restricted to expenditure for street related maintenance and repair, including sidewalks and storm drains. The Street Fund is primarily funded through the State gas tax. Revenue may also include specific project revenue such as the Pine/Main Street Signal Fund, State funded Special Small City Allotment Grants, and street impact fees. The City of Rogue River is projected to receive $130,964 from state gas taxes, and to collect $35,000 in street impact fees for the 2018-19 fiscal year. Together with an interfund transfer of $23,600 from the System Development Fund, miscellaneous revenue of $7,700, and a beginning fund balance of $483,063, the Street Fund has a projected total balance of $680,327 for the 2018-2019 fiscal year.

In the City's five year capital improvement plan Rogue River proposes to spend $118,600 on street system related capital improvement projects in 2018-19, $24,000 in 2019-20, $396,000 in 2010-21, $400,000 in 2021-22, $875,000 in 2022-23. These capital improvement projects are projected to be funded through the Street Fund.

Other Local Sources

Interfund Transfers

The City of Rogue River can reserve non-dedicated funds for transportation projects via the Interfund Transfer process. This allows the City to transfer General and Special Revenue funds into the Capital Improvement Program Fund for specific transportation system projects. Funding transportation projects via Interfund Transfers requires a budget amendment process, with expense proposals linked to specific planned projects (including TSP projects).

Local Gas Tax

Local fuel tax revenues offer a potential funding source for Rogue River TSP projects. Not every city in Oregon levies a local gas tax; of those that do, the local tax rate ranges from $0.01 to $0.03 per gallon. Many cities in Oregon charge a local diesel fuel tax in addition to gasoline taxes. Of those cities that levy a diesel fuel tax, the local tax rate ranges from $0.01 to $0.05 per gallon of diesel fuel. The City of Rogue River may consider raising its local gas tax as a way to generate additional street improvement funds. However, with relatively few jurisdictions exercising this tax, an increase in the cost differential between gas purchased in Rogue River and gas purchased in neighboring communities may encourage drivers to seek less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

Local Transient Room Tax

Local lodging taxes are regulated by ORS 320.300 to 320.350. Since 2003 significant changes have been imposed on lodging tax regulations. In 2016 House Bill 2267 placed restrictions on local lodging taxes, which are still in place. These restrictions required that any new or increased local lodging taxes must be appropriated in a manner directing 70% of proceeds to be used for tourism promotion or tourism related facilities and 30% can be used in any manner the local jurisdiction deems appropriate. Furthermore, the restrictions placed by House Bill 2267 required local jurisdictions to maintain the percentage of their existing lodging taxes designated to tourism promotion. The City of Rogue River Municipal Code Chapter 3.05 currently requires a 6% transient room tax. The City could choose to review their transient room tax policy and consider if any of the existing revenue could be used for transportation project funding. Currently the City designates 5% of the revenue toward administration of the collection, 25% to parks, 25% to public relations, and 45% to police protection. Also, of note is the rise in short term rentals or vacation rentals occurring in residential zones. The City could review the policy on short term rentals to see if any transient room tax revenue is being lost due to unregistered lodging.

Vehicle Registration Fees

The Oregon Vehicle Registration Fee is allocated to state, counties and cities for road funding. Oregon counties are granted authority to impose a vehicle registration fee covering the entire county. The Oregon Revised Statutes would allow Jackson County to impose a biannual registration fee for all passenger cars licensed within the County. Although both counties and special districts have this legal authority, vehicle registration fees have not been imposed by local jurisdictions. A disincentive to employing such a fee may be the cost of collection and administration. In order for a local vehicle registration fee program to be viable in Jackson County, all incorporated cities and the county would need to formulate an agreement which would detail how the fees would be spent on future street construction and maintenance.

Local Improvement Districts

The Oregon Revised Statutes allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct local projects such as streets, sidewalks, bikeways, or public facilities. The statutes allow formation of a district by either the city government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. The types of allocation methods are only limited by the scope of the Local Improvement Ordinance. The cost of LID participation is considered an assessment against the property, which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the city. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds.

Urban Renewal Area

Urban renewal areas are authorized under state law and implemented by cities or counties. They allow for the concentrated use of revenues (often tax-increment financing from property tax revenues) to improve areas within the designated urban renewal district. Eligible areas are called "blighted" by state statute and typically contain sections of a city which are underdeveloped or are not contributing fully to the local economy. One potential eligible consideration for formation and boundaries of an urban renewal area can be inadequate street systems. Consideration of an urban renewal area should comply with ORS Chapter 457 and OAR Chapter 150.

Local Parking Fees

Local parking fees are a common means of generating revenue for public parking maintenance and development. Most cities have some public parking and many charge nominal fees for use of public parking. Cities also generate revenues from parking citations. These fees are generally used for parking-related maintenance and improvements. The City does not currently charge for parking. Income generated by charging parking fees could be used to implement a variety of transportation projects. The collection system would require purchase of parking meter infrastructure, careful study of where to install meters, and analysis of the appropriate fee amount to charge drivers. However, relatively low demand and abundant free parking availability on nearby neighborhood streets may mean that charging for parking is infeasible.

ODOT Funding

Safety:

All Roads Transportation Safety: The All Roads Transportation Safety, or ARTS, Program is designed to address safety needs on all public roads in Oregon. The program is data driven to achieve the greatest benefits in crash reduction and should be blind to jurisdiction. The available money is separated into two categories — systemic and hot spots. Systemic project are proven, low-cost measures that have successfully reduced the occurrence of fatal and serious injury crashes and that can be widely implemented, like rumble strips on the shoulder of the road. Hot spots are identified by a higher than normal crash occurrence. These are often higher cost projects and are targeted to a specific segment of roadway or intersection.

Safe Routes to Schools: Safe Routes to School refers to efforts that improve, educate, or encourage children safely walking (by foot or mobility device) or biking to school. ODOT has two main types of Safe Routes to School programs: infrastructure and non-infrastructure. Infrastructure programs focus on making sure safe walking and biking routes exist through investments in crossings, sidewalks and bike lanes, flashing beacons, and the like. Non-infrastructure programs focus on education and outreach to assure awareness and safe use of walking and biking routes. ODOT manages funding competitions for both infrastructure and non-infrastructure programs at the annual levels of $10 million (increasing to $15 million in 2023) and $300,000 respectively.

Safety Grantee Resources: The Transportation Safety Division administers grants that adhere to our mission to deliver transportation safety programs to Oregon citizens. Typically, grants are awarded to states, local governments, colleges and universities, and non-profit organizations.

Road Preservation:

Special Small City Allotment Program: The Special Small City Allotment Program (SCA) is restricted to cities with populations under 5,000 residents. ODOT sets aside an annual allocation of state funds for local transportation projects. Through an agreement between the League of Oregon Cities and ODOT, ODOT sets aside $5,000,000 each year (half from city gas tax revenue and half from the State Highway Fund) for cities under 5,000 residents. Unlike some other grant programs, no locally funded match is required for participation. Grant amounts are limited to $100,000 and must be earmarked for surface projects (drainage, curbs, sidewalks, etc.) However, the program does allow jurisdictions to use the grants to leverage local funds on non-surface projects if the grant is used specifically to repair the affected area. Criteria for the $5 million in total annual grant funds include traffic volume, the five-year rate of population growth, surface wear of the road, and the amount of time since the last SCA grant.

Public Transportation:

Public Transportation Funding Opportunities: ODOT's Public Transit Section provides grants to communities and local transportation providers who offer public transportation.

Loans:

Oregon Transportation Infrastructure Bank: The Oregon Transportation Infrastructure Bank is a statewide revolving loan fund designed to promote innovative financing solutions for

transportation needs. Oregon's program was started in 1996 as part of a federal pilot program. Legislative action in 1997 established the program in state law and expanded the bank's authority. Staff support for the program is provided by the Financial Services office of the Oregon Department of Transportation.
Eligible borrowers include cities, counties, transit districts, port authorities, other special service districts, tribal governments, state agencies, and private for-profit and not-for-profit entities.

Eligible projects include:

- Highway projects such as roads, signals, intersection improvements, and bridges.
- Transit capital projects such as buses, equipment, and maintenance or passenger facilities.
- Bikeway or pedestrian access projects on highway right-of-way.

OTIB loans may be used to cover up to 100% of the costs of a transportation project. Eligible project costs include preliminary engineering, environmental studies, acquisition of right-of-way, equipment, construction including project management and engineering, inspections, financing costs and contingencies.

Economic Development:

Connect Oregon: Connect Oregon is a competitive grant program that invests in air, rail, marine, and bicycle/pedestrian infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient. Connect Oregon projects are eligible for grants that cover up to 70 percent of project costs. A minimum 30 percent cash match is required from the recipient for all grant funded projects (except Class I Railroads which now have a 50 percent match). Projects eligible for funding from state fuel tax revenues (section 3a, Article IX of the Oregon Constitution, the Highway Trust Fund), are not eligible for Connect Oregon funding.

Immediate Opportunity Fund: The purpose of the Immediate Opportunity Fund, or IOF, is to support primary economic development in Oregon through the construction and improvement of streets and roads. Access to this fund is discretionary and the fund may only be used when other sources of financial support are unavailable or insufficient. The IOF is not a replacement or substitute for other funding sources.

Bridges:

The Oregon Department of Transportation's Bridge Section coordinates selection and funding of Federal Highway Bridge Program bridges through the Local Agency Bridge Selection Committee, a committee of city, county, and state representatives. Local agency bridges are prioritized using a Technical Ranking System and selected in categories of Large (30,000+ square feet of deck area), Small On-System, and Small Off-System.

Surface Transportation Block Grant:

The Surface Transportation Block Grant (STBG), formerly the Surface Transportation Program (STP), provides flexible funding that may be used by states and localities, such as Rogue River, for projects to preserve and improve the conditions and performance on any Federal-aid

highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. With aggressive funding application it is anticipated that Rogue River could likely receive approximately 20% of the available STBG funding available to jurisdictions within the Middle Rogue Metropolitan Planning Organization (MRMPO), a total of $3,439,275, over the next 20 year period.

Federal Grants

In addition to STBG funds, Rogue River is eligible for federal grants.

City of Rogue River Loan Potential

The City has the following General Obligation loan debt currently outstanding; Loans under the Oregon Transportation infrastructure Bank Fund in the amount not to exceed $1,600,000. Two loans make up this amount. #2013A is in the amount of $250,000 at 1% interest. The other, #2013B, is for $1,250,000 at an interest rate of 3.09%. Both are 20 year terms. The loans were obtained to pay for repairs to the City's street system. The proceeds to repay these loans come from property tax revenue and are be accounted for in the Governmental Debt Service Fund.

State law provides a debt limit of 3% of the true cash value of all taxable property within the City's boundaries. (The 3% does not apply to bonds issued for sewer systems, disposal plants, or water treatment facilities.) The City has issued $1,568,771 in debt subject to the 3% limit. The amount legally available for future indebtedness is $4,773,814.

Other Revenue Sources

Rogue River has historically benefited from a number of other revenue sources, such as transportation improvement grants and other miscellaneous programs administered by the Oregon Department of Transportation (ODOT) and the Federal Highway Administration FHWA). Although they shouldn't be considered consistent and reliable funding sources, they have contributed (and may contribute) to several major projects currently identified in the City's Capital Improvement Plan (CIP).

Funding Forecast

Table 01 below summarizes the forecasted funds potentially available for capital transportation projects in Rogue River over the next 20 years.

Table 01: Funding Forecast

Revenue Source	20 Year Projection
State Gas Tax Apportionment	
Not designated for ODOT match	$742,095
Designated for 30% ODOT match (per Interchange Imp. Agreement)	$2,275,800
ODOT 70% match per Interchange Improvement Agreement	$5,310,200
System Development Charges (SDC)	$320,000
Street Impact Fees	$700,000
Special Small City Allotment Grant	$1,000,000 (100,000 bi-annually)
STBG Funding	$3,439,275 (projected 20% of MRMPO STBG)
Total	$13,787,370

Based on the information shown in Table 01, Rogue River anticipates approximately $13,787,370 over the next 20 years for transportation improvement projects on City facilities.

Of particular note, the proposed capital improvement program spending related to streets over the next 5 years ($1,813,600 total at an average of $362,720 per year) outpaces revenue projections. The City will need to find additional revenue sources in order to complete currently planned street projects within the current 5 year CIP timeline.

Financially Constrained (Tier 1) Project List

The Financially Constrained (Tier 1) Project List identifies the transportation system improvement projects that are likely to be funded by the City over the next 20 years. The projects were selected from the project lists identified in Section 6: Transportation System Plan based on an evaluation of the goals and objectives of the TSP update and application of a prioritization process. Additional information related to the prioritization process is provided in Technical Memorandum 9: Financially Constrained Transportation Project List.

Table 02 summarizes the Financially Constrained (Tier 1) Project List for the Rogue River TSP update. As shown, the list includes a mix of roadway and intersection projects along City facilities. The projects are organized into short range (0-5 years), medium range (5-10 years), and long range (10-20 years) projects based on the outcome of the prioritization process as well as consideration of traffic signal/roundabout and turn lane warrants evaluated in previous memorandum. Also shown, the list includes planning level cost estimates for each project. These estimates were developed based on the unit costs of similar projects. Figure 02 illustrates the Financially Constrained (Tier 1) Project List along with the Unconstrained (Tier 2).

Table 02: Financially Constrained Project List (Tier 1)

TSP ID	Location/Description	Type	Priority	Cost (1,000)
P12-B	Ist Street, Broadway to Cedar	Pedestrian	Short Range	99,000
P10-B	Pine and Depot	Pedestrian	Short Range	70,000
P2-A	East Main, Wards Creek Road to N. River Road	Pedestrian	Short Range	41,000
P12-E	Oak Street	Pedestrian	Short Range	190,000
P12-D	Berglund	Pedestrian	Medium Range	412,000
P4-6-A	Broadway, Pine, and E Main	Pedestrian	Medium Range	108,000
P12-A	W. Evans Creek South or Palmerton Park	Pedestrian	Medium Range	538,000
P1-B	West Main/Foothill	Pedestrian	Medium Range	571,000
P12-P	Pine Street, Depot to E. Main	Pedestrian	Medium Range	417,000
P7-B	North River Rd: Add 6' sidewalk/10' sidepath	Pedestrian	Long Range	122,000
P12-C	2nd St (Oak – End) Add sidewalks	Pedestrian	Long Range	96,000
P12-J	4th St (off of Berglund St); add sidewalks	Pedestrian	Long Range	50,000
P12-H	Park St: Add sidewalks	Pedestrian	Long Range	130,000
B1-C	Pine Street, E. Main to City Limits	Bicycle	Short Range	35,000
B5-A	Broadway St, E. Main to 1st	Bicycle	Medium Range	25,000
B4E-A	East Main St. (Ward Creek – North River Rd); Add 6' bike lanes	Bicycle	Long Range	12,000
OS4-F	Depot & Pine Street intersection	Op. & Safety	Short Range	81,000
OS8-E	Signalize and realign Pine & Main Street	Op. & Safety	Short Range	2,290,000
OS5-C	SB I-5 off-ramp	Op. & Safety	Short Range	2,276,000
OS5-B	NB I-5 off ramp	Op. & Safety	Short Range	619,000
OS3-D	Depot & Main St. intersection	Op. & Safety	Short Range	2,320,000
C7-B	7th Street Extension, Broadway to Pine	Connectivity	Long Range	2,158,000
BR2-B	Classick Dr over Wards Creek; Construct parallel pedestrian/bicycle bridge	Local Bridge	Medium Range	150,000
B9-A	OR 99 outside city limits	Local Bridge	Medium Range	576,000
BR-1-B	Main St over Wards Creek; Construct parallel pedestrian/bicycle bridge	Local Bridge	Long Range	203,000
PV1	Broadway St.	Pavement	Short Range	66,000
PV4	Foothill Blvd.	Pavement	Medium Range	36,000
PV3	Wards Creek Rd.	Pavement	Long Range	90,000

As shown in Table 02, the total cost of the Financially Constrained (Tier 1) Project list is $13,781,000.

Unconstrained (Tier 2) Project List

The Unconstrained (Tier 2) Project List identifies the transportation system improvement projects that are a priority for the City; however, they are not likely to be funded over the next 20 years without a significant increase in available funding. The projects were selected from the

project lists identified in Section 6: Transportation System Plan based on an evaluation of the goals and objectives of the TSP update and application of a prioritization process similar to the Financially Constrained (Tier 1) Project List.

Table 03 summarizes the Unconstrained (Tier 2) Project List for the Rogue River TSP update. As shown, the list includes a mix of roadway projects along City facilities. The projects are organized based on the outcome of the prioritization process. Opportunities to implement the projects shown in Table 03 should be considered as funding becomes available.

Table 03: Financially Unconstrained Project List (Tier 2)

Map ID	Location/Description	Type	Cost (1,000)
P12-M	West Evans Creek Rd (N of Palmerton Park): Add 10' sidepath	Pedestrian	363,000
P12-I	Gardiner St: Add sidewalks	Pedestrian	336,000
P12-A	West Evans Creek Rd (S of Palmerton Park): Add sidewalks	Pedestrian	624,000
P8-B	Classick Dr: Add 10' sidepath	Pedestrian	532,000
P12-F	Cedar St: Add sidewalks	Pedestrian	629,000
P3-B	East Evans Creek Rd: Add 10' sidepath	Pedestrian	1,162,000
P7-D	North River Rd: Add 6' sidewalk/10' sidepath combination	Pedestrian	916,000
P13-A	OR99: Add 6' sidewalks & 12' buffered bicycle lanes within city limits	Pedestrian	212,000
P8-C	Classick Dr: Add street lighting	Pedestrian	67,000
P10-A	Pine St (Depot – Main St): Add 6' sidewalks	Pedestrian	127,000
P9-C	3rd St: Add street lighting	Pedestrian	24,000
P11-B	Wards Creek Rd (East Main St to City Limits): Add 6' sidewalks	Pedestrian	323,000
B9-A	OR99 (From city limits to UGB): Add 10' sidepath	Bicycle	576,000
P12-P	Pine St (Depot – East Main St): Add buffered bicycle lane	Bicycle	417,000
B8-C	3rd St (Pine St – City Limits): Add 10' sidepath	Bicycle	663,000
B6-B	Broadway St (1st St – N): Add10' buffered bike lanes	Bicycle	54,000
B4W-A	East Main St (Pine St – Ward Creek): Add 6' bike lanes	Bicycle	12,000
T1-A	Add on-demand transit service	Transit	179,000/yr
OS5-E	Interchange refinement study	Op. & Safety	750,000
C10	Code updates – Preserving future connectivity	Connectivity	n/a
C4-B	3rd St Extension (to Wards Creek Dr): East of Blue Ridge Dr	Connectivity	9,748,000
C2-A	3rd St Extension: Pine St to West Evans Creek Rd	Connectivity	7,325,000
C5-A	New roadway parallel with West Evans Creek Rd	Connectivity	8,652,000

Council Bill
No. 19-2384

RESOLUTION NO. 19-1353-R

A RESOLUTION APPROVING AN AGREEMENT AUTHORIZING THE CITY OF ROGUE RIVER, OREGON, TO PARTICIPATE IN A COST SHARING ARRANGEMENT WITH THE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) FOR SPECIFIC TRANSPORTATION PROJECTS RELATED TO INTERSTATE-5 ALTERNATE MOBILITY STANDARDS.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ROGUE RIVER, OREGON.

WHEREAS, the City of Rogue River is in the process of adopting a new Transportation System Plan (TSP) that outlines prioritized transportation system improvements expected to be completed over the next 20-years to improve current system deficiencies and accommodate future system stresses; and,

WHEREAS, ODOT has identified specific operations and safety projects directly contributing to Interstate-5 (I-5) alternate mobility standards, and agrees to contribute towards these specific projects on a 30% City match and 70% ODOT match format; and,

WHEREAS, the following specific projects are being identified in the TSP as the Deport and Pine Street intersection (OS4-5), Depot and Main Street intersection (OS-D), North Bound I-5 off-ramp (OS5-B), South Bound I-5 off-ramp (OS5-C), and the Pine and Main Street intersection (OS8-E); and,

WHEREAS, the City of Rogue River has an expectation to receive local matching funds through the State Gas Tax Apportionment system over the next 20-years to fulfill its share of obligation related to this agreement should the projects move forward; and,

WHEREAS, this agreement is not a binding contract guaranteeing the City of Rogue River to a specific project amount, but is a recorded intent to participate in matching funding requirements of specific transportation system projects.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Rogue River, Oregon, as follows:

Section 1. The City Council demonstrates their intent to partner with ODOT in terms of funding these transportation system projects as to be identified in the final adopted TSP, expected to be adopted by July of 2020.

Section 2. This Resolution shall be effective following its adoption by the City Council.

RESOLUTION NO. 19-1353-R

The adoption of the about Resolution was moved by **PASCALAR,** seconded by **POLING,** and roll call being had thereon, resulted as follows:

Pascalar; aye, England aye, Stuart; aye, Hilty; aye, Daugherty; aye, Poling; aye.

Whereupon the Mayor declared the motion to be carried and the Resolution approved.

PASSED this **23rd** day of **May 2019**, by the Common Council of the City of Rogue River, Oregon.

SIGNED this **24th** day **May 2019,** by the Mayor of the City of Rogue River, Oregon.

Ryan Hess
Mayor

ATTEST:

Carol J. Weir, MMC
City Recorder

TRANSPORTATION SYSTEM PLAN

City of Rogue River

DRAFT

Photo Credit: James Gerhardt