City of Rogue River Addendum
to the Jackson County NHMP



Photos courtesy of Oregon State Archives

Effective: February 12 2024 through February 11, 2029

Prepared for
City of Rogue River
133 Broadway Street
Rogue River, OR 97537

Prepared by
The University of Oregon
Institute for Policy Research & Engagement
School of Planning, Public Policy, and Management

UNIVERSITY OF OREGON | Institute for Policy Research and Engagement

Table of Contents

Table of Contents

INTRODUCTION 1
Purpose *1*
NHMP PROCESS, PARTICIPATION AND ADOPTION 1
NHMP IMPLEMENTATION AND MAINTENANCE 2
Implementation through Existing Programs *3*
Capability Assessment *4*
Existing Authorities 4
Policies and Programs 5
Capital Projects *6*
Capital Resources *7*
Findings 7
MITIGATION STRATEGY 8
Mitigation Successes *8*
Action Items *8*
RISK ASSESSMENT 13
Hazard Analysis *13*
Community Characteristics *14*
Economy 16
Community Assets *18*
Critical Facilities 19
Essential Facilities 20
Infrastructure: 20
Hazard Profiles *21*
Air Quality 21
Drought 21
Earthquake (Cascadia) 22
Earthquake (Crustal) 24
Emerging Infectious Disease 26
Flood 26
Landslide 30
Severe Weather 32
Extreme Heat Event 32
Windstorm 33
Winter Storm (Snow/Ice) 34
Volcanic Event 35
Wildfire 35

ATTACHMENT A: PUBLIC INVOLVEMENT SUMMARY 38

Website Posting *39*
Rogue River Steering Committee *40*

ATTACHMENT B: ACTION ITEM CHANGES 41

List of Tables

Table RA-1 Action Items 9
Table RA-2 Hazard Analysis Matrix – Rogue River 14
Table RA-3 Rogue River Community Lifelines 19
Table RA-4 Rapid Visual Survey Scores 24
Table RA-5 Rogue River Repetitive Loss Properties 30
Table RA-6 Status of All Hazard Mitigation Actions in the Previous Plan 42

List of Figures

Figure RA-1 Understanding Risk 13
Figure RA-2 Rogue River Community Lifelines and Historic Structures 18
Figure RA-3 Cascadia Subduction Zone Perceived Shaking 23
Figure RA-4 Liquefaction Susceptibility 25
Figure RA-5 FEMA Flood Zones 27
Figure RA-6 Rogue River Repetitive Loss Properties 30
Figure RA-7 Landslide Susceptibility Exposure 31
Figure RA-8 Burn Probability in Eagle Point and Community Lifelines 36

U.S. Department of Homeland Security
FEMA Region 10
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

April 10, 2024

The Honorable Rick Dyer, Chair
Jackson County Board of Commissioners
10 South Oakland Ave.
Medford, Oregon 97501

Reference: Approval of the Jackson County Multi-jurisdictional Hazard Mitigation Plan

Dear Chair Dyer:

In accordance with applicable[1] laws, regulations, and policy, the United States Department of Homeland Security's Federal Emergency Management Agency (FEMA) Region 10 has approved the Jackson County multi-jurisdictional hazard mitigation plan for the following jurisdictions:

City of Butte Falls	City of Phoenix	Jackson County
City of Talent	City of Gold Hill	City of Shady Cove
City of Rogue River	City of Eagle Point	Jackson County Fire District #3
Medford Water Commission	City of Ashland	City of Jacksonville
City of Central Point		

The approval period for this plan is from February 12, 2024 through February 11, 2029.

In addition, Jackson County met the requirements for addressing all dam risks listed in the multi-jurisdictional hazard mitigation plan.

An approved hazard mitigation plan is one of the conditions for applying for and receiving FEMA mitigation grants from the following programs:

- Hazard Mitigation Grant Program (HMGP)
- Hazard Mitigation Grant Program Post-Fire (HMGP-PF)
- Building Resilient Infrastructure and Communities (BRIC)
- Flood Mitigation Assistance (FMA)
- High Hazard Potential Dams Grants Program (HHPD)

To avoid a lapsed plan, the next plan update must be approved before the end of the approval period, including adoption by the participating jurisdiction(s). Before the end of the approval period, please allow sufficient time to secure funding for the update, including the review and approval process. Please include time for any revisions, if needed, and for participating jurisdictions to formally adopt

[1] Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and National Dam Safety Program Act, as amended; Title 44 Code of Federal Regulations (CFR) Part 201, Mitigation Planning; and Local Mitigation Planning Policy Guide (FP-206-21-0002).

the plan after the review, if not adopted prior to submission. This will enable each jurisdiction to remain eligible to apply for and receive funding from FEMA's mitigation grant programs with a hazard mitigation plan requirement. Local governments, including special districts, with a plan status of "Approvable Pending Adoption" are not eligible for FEMA's mitigation grant programs with a hazard mitigation plan requirement.

If you have questions regarding your plan's approval or FEMA's mitigation program, please contact Joseph Murray, Mitigation Planner with the Oregon Department of Emergency Management at (503) 378-2911 or joseph.murray@oem.oregon.gov, who coordinates these efforts for local entities.

Sincerely,

WENDY L SHAW
Digitally signed by WENDY L SHAW
Date: 2024.05.16 06:17:28 -08'00'

Wendy Shaw, P.E.
Risk Analysis Branch Chief
Mitigation Division

Enclosures

cc: Stephen Richardson, Oregon Department of Emergency Management

JF:JG:ws

Council Bill
No. 24-2484

RESOLUTION NO. 24-1427-R

A RESOLUTION ADOPTING THE CITY OF ROGUE RIVER REPRESENTATION IN THE UPDATES TO THE JACKSON COUNTY MULTI-JURISDICTIONAL NATURAL HAZARDS MITIGATION PLAN.

BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF ROGUE RIVER, OREGON:

WHEREAS, the City of Rogue River recognizes the threat that natural hazards pose to people, property and infrastructure within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

WHEREAS, an adopted Natural Hazards Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the City of Rogue River has fully participated in the FEMA prescribed mitigation planning process to prepare the *Jackson County, Multi-Jurisdictional Natural Hazards Mitigation Plan*, which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

WHEREAS, the City of Rogue River has identified natural hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the City of Rogue River to the impacts of future disasters within the *Jackson County, Multi-Jurisdictional Natural Hazards Mitigation Plan*; and

WHEREAS, these proposed projects and programs have been incorporated into the *Jackson County, Multi-Jurisdictional Natural Hazards Mitigation Plan* that has been prepared and promulgated for consideration and implementation by the participating cities and special districts of Jackson County; and

WHEREAS, the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the *Jackson County, Multi-Jurisdictional Natural Hazards Mitigation Plan* and pre-approved it (dated, January 9, 2024) contingent upon this official adoption of the participating governments and entities;

WHEREAS, the NHMP is comprised of comprised of three volumes: Volume I -Basic Plan, Volume II – Appendices, and Volume III – Jurisdictional Addenda, collectively referred to herein as the NHMP; and

WHEREAS, the NHMP is in an on-going cycle of development and revision to improve it's effectiveness; and

WHEREAS, City of Rogue River adopts the NHMP and directs the City Administrator to develop, approve, and implement the mitigation strategies and any administrative changes to the NHMP.

NOW, THEREFORE, BE IT RESOLVED, that the City of Rogue River adopts *the Jackson County Multi-Jurisdictional Natural Hazards Mitigation Plan* as an official plan; and

BE IT FURTHER RESOLVED, that the City of Rogue River will submit this Adoption Resolution to the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials to enable final approval of the *Jackson County Multi-Jurisdictional Natural Hazards Mitigation Plan*.

RESOLUTION NO. 24-1427-R

The adoption of the above Resolution was moved by **GREGORY**, seconded by **MOSS**, and roll call being had thereon, resulted as follows:

Howell; aye, Kempa, aye; Hilty; aye, Moss; aye, Gregory; aye, Davis: aye.

Whereupon the Mayor declared the motion to be carried and the Resolution approved.

PASSED this **28th** day of **March 2024**, by the Common Council of the City of Rogue River, Oregon.

SIGNED this **29th** day **March 2024,** by the Mayor of the City of Rogue River, Oregon.

Pam VanArsdale
Mayor

ATTEST:

Diane Oliver
City Recorder

Introduction

Purpose

This is an update of the Rogue River addendum to the Jackson County Multi-Jurisdictional Natural Hazard Mitigation Plan (MNHMP, NHMP). This addendum supplements information contained in Volume I (Basic Plan) which serves as the NHMP foundation and Volume II (Appendices) which provide additional information. This addendum meets the following requirements:

- Multi-Jurisdictional **Plan Adoption** §201.6(c)(5),
- Multi-Jurisdictional **Participation** §201.6(a)(3),
- Multi-Jurisdictional **Mitigation Strategy** §201.6(c)(3)(iv) and
- Multi-Jurisdictional **Risk Assessment** §201.6(c)(2)(iii).

Updates to Rogue River's addendum are further discussed throughout the NHMP and within Volume II, Appendix B, which provides an overview of alterations to the document that took place during the update process.

Rogue River adopted their addendum to the Jackson County Multi-jurisdictional NHMP on March 28, 2024. FEMA Region X approved the Jackson County NHMP on February 12, 2024 and the City's addendum on May 16, 2024. With approval of this NHMP, the City is now eligible for non-disaster and disaster mitigation project grants through February 11, 2029.

NHMP Process, Participation and Adoption

This section of the NHMP addendum addresses 44 CFR 201.6(c)(5), *Plan Adoption* and 44 CFR 201.6(a)(3), *Participation.*

In addition to establishing a comprehensive city level mitigation strategy, the Disaster Mitigation Act of 2000 (DMA2K), and the regulations contained in Title 44 CFR Part 201, require that jurisdictions maintain an approved NHMP to receive federal funds for mitigation projects. Local adoption, and federal approval of this NHMP ensures that the city will remain eligible for non-disaster and disaster mitigation project grants. Rogue River was included as an addendum in the 2012 and 2018 Jackson County NHMP processes.

The Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Institute for Policy Research and Engagement (IPRE) partnered with the Oregon Department of Emergency Management (OEM), Jackson County and Rogue River to update their NHMP. This project is funded through the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program. Members of the Rogue River NHMP steering committee also participated in the County NHMP update process (Volume II, Appendix B).

By updating the NHMP, locally adopting it and having it re-approved by FEMA, Rogue River will maintain eligibility for FEMA Hazard Mitigation grant program funds.

The Jackson County NHMP and Rogue River addendum are the result of a collaborative effort between citizens, public agencies, non-profit organizations, the private sector, and regional organizations. A project steering committee guided the process of developing the NHMP.

Convener and Committee
The Rogue River City Administrator served as the designated convener of the NHMP update and the Public Works Director will take the lead in implementing, maintaining, and updating the addendum to the Jackson County NHMP in collaboration with the designated convener of the Jackson County NHMP (Emergency Manager).

Representatives from the City of Rogue River steering committee met formally and informally, to discuss updates to their addendum (Volume II, Appendix B). The steering committee reviewed and revised the City's addendum, with particular focus on the NHMP's risk assessment and mitigation strategy (action items).

This addendum reflects decisions made at the designated meetings and during subsequent work and communication with Jackson County Emergency Management and the OPDR.

The Rogue River Steering Committee was comprised of the following representatives:

- Convener, Ryan Nolan, City Administrator
- Mike Hammond, RRFD

The steering committee was closely involved throughout the development of the NHMP and served as the local oversight body for the NHMP's development.

NHMP Implementation and Maintenance

The City Council will be responsible for adopting the Rogue River addendum to the Jackson County NHMP. This addendum designates a steering committee and a convener to oversee the development and implementation of action items. Because the City addendum is part of the County's multi-jurisdictional NHMP, the City will look for opportunities to partner with the County. The City's steering committee will convene after re-adoption of the Rogue River NHMP addendum on an annual schedule. The County is meeting on a semi-annual basis and will provide opportunities for the cities to report on NHMP implementation and maintenance during their meetings. The City's Administrator will serve as the convener and will be responsible for assembling the steering committee.

The steering committee will be responsible for:

- Reviewing existing action items to determine suitability of funding;
- Reviewing existing and new risk assessment data to identify issues that may not have been identified at NHMP creation;

- Educating and training new steering committee members on the NHMP and mitigation actions in general;
- Assisting in the development of funding proposals for priority action items;
- Discussing methods for continued public involvement;
- Evaluating effectiveness of the NHMP at achieving its purpose and goals (use Table 4-1, Volume I, Section 4, as one tool to help measure effectiveness); and
- Documenting successes and lessons learned during the year.

The convener will also remain active in the County's implementation and maintenance process (Volume I, Section 4).

The steering committee will be responsible for activities outlined in Volume I, Section 4.

The City will utilize the same action item prioritization process as the County (Volume I, Section 4 and Volume II, Appendix D).

Implementation through Existing Programs

Many of the Natural Hazard Mitigation Plan's recommendations are consistent with the goals and objectives of the City's existing plans and policies. Where possible, Rogue River will implement the NHMP's recommended actions through existing plans and policies. Plans and policies already in existence have support from local residents, businesses, and policy makers. Many land-use, comprehensive, and strategic plans get updated regularly, allowing them to adapt to changing conditions and needs. Implementing the NHMP's action items through such plans and policies increases their likelihood of being supported and implemented.

Rogue River's acknowledged comprehensive plan is the City of Rogue River Comprehensive Plan administered by the Rogue River Planning Commission. The City implements the plan through the Community Development Code.

Rogue River currently has the following plans that relate to natural hazard mitigation. For a complete list visit the City's **website**:

- Comprehensive Plan (1990, amended 2005, available through request)
- Municipal Code (in update, flood ordinance may be updated)
- Capital Improvement Plan (available through Public Works)
- Building Codes and Standards: Oregon Structural Specialty Code (Commercial) and Oregon Residential Specialty Code.
- Emergency Operations Plan
- Water CIP
- Wastewater CIP
- Street CIP
- Storm Drain CIP

Capability Assessment

The Capability Assessment identifies and describes the ability of Rogue River to implement the mitigation strategy and associated action items. Capabilities can be evaluated through an examination of broad categories, including existing authorities, policies, programs, funding, and resources.

Existing Authorities

Hazard mitigation can be executed at a local scale through three (3) methods: integrating hazard mitigation actions into other local planning documents (i.e., plan integration), adopting building codes that account for best practices in structural hardening, and codifying land use regulations and zoning designations that prescribe mitigation into development requirements. The extent to which a municipality or multi-jurisdictional effort leverages these approaches is an indicator of that community's capabilities.

Comprehensive Plan

Oregon's Statewide Planning Goal 7 requires comprehensive planning within every jurisdiction that is designed to reduce risks to people and property from natural hazards. Rogue River addresses Statewide Planning Goal 7 Natural Hazards as part of their Comprehensive Plan. Rogue River's Goal 7: Areas Subject to Natural Hazards Element (chapter 7) is intended to preserve and protect the natural environment in and around Rogue River in order to assure present and future residents a livable community with a high quality of life, to promote healthy and sustainable riparian areas and wetlands, and to minimize natural hazards. It covers the appropriate regulation of new construction within the floodplain, development in areas of steep terrain, all new development to assure the proper control and disposal of storm waters, and all new construction to minimize the potential for earthquake damage.

Planned updates to the jurisdiction's Goal 7 element or its broader comprehensive plan will reflect the data and findings within this NHMP and integrate analyses of future climate and natural hazard impacts into the community's long-range plans.

Land Use Regulations

Existing land use policies that define zoning and address hazardous conditions provide another source of mitigation capability.

Rogue River contracts with Rogue Valley Council of Governments for current and long-range planning services, as well as the implementation of the Rogue River Comprehensive Plan and Land Use Code (Chapters 15-18 of the Rogue River Municipal Code). They work closely with the County and neighboring jurisdictions to ensure plans are aligned.

The Rogue River Land Use Code was updated in 2023. Sections that impact hazard mitigation and resilience were revised to reflect current hazard analysis and recommendations through Ordinance 23-418-O, including:

- Flood Damage Prevention 15.55
- Storm and Surface Water Management 17.90
- Riparian Protection Requirements 17.135

Structural Building Codes
The Oregon Legislature recently adopted updated building codes for both residential (2021 adoption) and commercial structures (2022) since the last update of this Plan. These building codes are based on the 2021 version of the International Building Code, International Fire Code, and International Existing Building Code. Northwest Code Professionals provide Building Official services to Rogue River and administer current Structural and Specialty Codes adopted by Jackson County. As a result, both new residential and commercial structures will be required to build according to the latest seismic and wind hardening standards in addition to requiring fire resistant building materials for those structures constructed in proximity or within the WUI.

Public Works
The duties and responsibilities of the Public Works Department include:

- Maintaining the City's street network to ensure the safe passage of persons and goods on public roads regardless of weather conditions.
- Operating the City's water treatment plant in accordance with safe drinking water regulations.
- Overseeing the collection and treatment of sanitary sewage.
- Administering standards of development within the City limits.
- Monitoring storm water drainage.

Many of the capital improvement projects are managed out of the Public Works Department. Much of their work is associated with the reduction of hazards to the community and the implementation of resilience measures.

City Administration
The City Council of Rogue River has the responsibility of developing and adopting the annual city budget. Integrating hazard mitigation goals and projects into the annual budget is key to implementing the plan. The City Council tries to broadly address resilience planning needs while it determines city and departmental priorities and looks for multiple-impact projects wherever possible. They also work with staff to apply for federal and state grant funding to pursue larger projects that are outside of general fund capacity.

Policies and Programs

This Plan directs Rogue River and Jackson County to explore integration into other planning documents and processes. Rogue River has made significant progress in integrating the NHMP into its portfolio of planning processes and programs over the last five years.

City of Rogue River Transportation System Plan (TSP), June 2021
This 20-year multi-modal plan covers the Rogue River urban growth boundary. The TSP includes implementation tools resulting in a street pattern and internal circulation network that serves the needs of residents, pedestrians, bicyclists, and motorists, street standards that will be used to guide land use decisions, and recommendations to guide transportation investment decisions.

Community Wildfire Protection Plan
The Jackson County Community Wildfire Protection Plan (CWPP) will be incorporated into this Plan as a functioning annex. The NHMP will also be integrated into the City's Capital Improvement Plan, to be adopted by March, 2024.

National Flood Insurance Program
The City participates in the National Flood Insurance Program. The first Flood Insurance Rate Maps were developed for the city in 1980. Contracted staff from the Rogue Valley Council of Governments are responsible for administering the day-to-day activities of the city's floodplain program. They are assisted by the Planning Department, Building Official, Public Works, and by the City Administrator. Their flood prevention code section is based on the Oregon Model Flood Hazard Prevention code, which includes provisions addressing substantial improvement/substantial damage.

Rogue River Community Wildfire Protection Project
The Rogue River Community Wildfire Protection Project is a strategic, ecologically-minded project collaboration to help reduce the threat of wildfire within selected areas of Rogue River, Oregon and specific areas adjacent to the city. The City of Rogue River, local Firewise communities and Rogue River Woodlands group joined with Lomakatsi Restoration Project and other members of the Rogue Forest Partners, including the local OSU Extension and Southern Oregon Forest Restoration Collaborative, to raise over $1.5 million to assist landowners and the City of Rogue River in reducing wildfire risk through ecological thinning and prescribed fire.

Personnel
The following Rogue River personnel have assignments related to natural hazard mitigation planning and implementation:

Emergency Management: Police Chief, Public Works Director, City Administrator

Public Information Officer: Mayor, City Administrator

Floodplain Manager: City Administrator

Grant writing (for Public Works or emergency management): Rogue Valley Council of Governments

Capital improvement planning: City Administrator, Public Works Director

Capital improvement execution: City Administrator, Public Works Director

Rogue River does not have any employees solely designated to Emergency Management or Mitigation. These personnel integrate hazards and resilience planning into their greater work programs to the best of their abilities. However, there is limited capacity to expand upon their capabilities or workloads.

Capital Projects

Rogue River has implemented recommendations from the last NHMP into its capital improvement projects over the last 5 years, including:

Water Treatment Plant
Public Works updated all the control software and computer automation to be able to remotely monitor and operate the Treatment Plant, made modern all valve systems and chemical monitoring systems, and tied in the process control programing.

Water Meter Replacement Project
The water meter replacement project installation gives advance warning of leaks in the water system. In the event of a natural disaster first responders would be able to better isolate leaks in the water distribution system to save that critical resource.

Pending but approved and funded:

- New reservoir
- finished water pumping station
- additional fire hydrants

Capital Resources

Rogue River maintains several capital resources that have important roles to play in the implementation of the natural hazard mitigation plan, including:

Communication towers:

- Drinking Water Reservoir (for communications and operation of the water treatment plant and for automated water meter reading system)

Critical facilities with power generators:

- Wastewater Treatment Plant
- Wards Creek Lift Station
- Evens Creek lift station
- two mobile generators (for the wells and another for the lift stations that do not have emergency power)

Fueling Storage:

- Fire Department
- Wastewater Plant & Lift Stations (minimum 3-day supply)

Findings

Several important findings from this capability assessment informed the design of the Plan's mitigation strategy and aided in prioritizing action items.

Staffing Limitations and Capacity
Rogue River staff are assigned hazard mitigation responsibilities as a (small) part of their larger job responsibilities. Limited capacity reduces the breadth of the programming the community can undertake in any year. The city relies upon its relationships with the County and other cities within its region to expand its operations.

Reliance upon outside funding streams and local match requirements
Rogue River operates on a limited budget with a small staff. This leaves few opportunities for using local financial resources to implement hazard mitigation work. They lean heavily upon state and federal grant funds as the primary means for securing mitigation funding. Hazard mitigation grants such as HMGP and BRIC require 10-25% local funding match, as well as extra staff capacity and expertise to navigate the application process and manage the funding.

Leveraging Partnerships with Public and Nonprofit Entities
Regional planning displayed in Community Wildfire Protection Planning process demonstrates the City's ability to effectively share information and identified priority needs.

Mitigation Strategy

This section of the NHMP addendum addresses 44 CFR 201.6(c)(3(iv), *Mitigation Strategy*.

The City's mitigation strategy (action items) was first developed during the 2012 NHMP planning process. During this process, the steering committee assessed the City's risk, identified potential issues, and developed a mitigation strategy (action items).

During the 2017 and 2023 updates, the City re-evaluated their mitigation strategy (action items). During these processes, action items were updated, noting what accomplishments had been made and whether the actions were still relevant, and new action items were defined (see Volume II, Appendix B for more information on changes to action items).

Mitigation Successes

Rogue River has several examples of hazard mitigation including the following projects funded through FEMA Hazard Mitigation Assistance and the Oregon Infrastructure Finance Authority's Seismic Rehabilitation Grant Program[1].

Seismic Rehabilitation Grant Program Mitigation Successes

- 2016: Rogue River West Elementary Seismic Rehab ($1,497,500)
- 2010: Rogue River East Elementary Seismic Rehab ($1,500,000)

Action Items

Table RA-1 documents the title of each action along with, the lead organization, partners, timeline, cost, and potential funding resources.

Most of these actions carry forward from prior versions of this NHMP (Jackson County and/ or Rogue River NHMPs).

[1] The Seismic Rehabilitation Grant Program (SRGP) is a state of Oregon competitive grant program that provides funding for the seismic rehabilitation of critical public buildings, particularly public schools, and emergency services facilities.

Table RA-1 Action Items

Action Item #	Mitigation Actions	Potential Funding Resources	Lead	Partners	Timeline	Cost
Multi-Hazard Mitigation Strategies						
1.1	**Incorporate hazard-resilient development design and siting of infrastructure into development code, ordinances, and updated Stormwater Master Plan.**	**Local Funding Resources, DLCD Technical Assistance Grant**	**City Administration**	**City Planning, City Building**	**O**	**L**
1.2	Sustain a public awareness and education campaign about natural hazards through ongoing monthly newsletters, River Ranger program, online communications, and other outreach events.	Local Funding Resources	City Administration	City Public Works, Rogue River Fire District, Jackson County Fire, Jackson County, Community Organizations	O	L
1.3	Integrate the goals and action items from the Natural Hazards Mitigation Plan into Municipal Code related to residential development and into the Stormwater Master Plan relating to commercial and multifamily development.	Local Funding Resources, DLCD Technical Assistance Grant	City Planning	City Administration, City Public Works, Building Codes Division	O	L
1.4	Continue to integrate conservation and watershed protection into existing wildfire and other Municipal Code ordinances.	Local Funding Resources	City Administration	City Planning, City Public Works, Fire District	S	L
1.5	Promote the use of disaster registry and early warning on existing platforms.	Local Funding Resources	City Administration	Rogue River Fire District	S	L

Action Item #	Mitigation Actions	Potential Funding Resources	Lead	Partners	Timeline	Cost
1.6	Integrate watercraft into response capability	Local Funding Resources	City Administration	Rogue River Fire District	S	L
Air Quality Mitigation Strategies						
2.0	The steering committee, using available local resources, will study this hazard further during the implementation and maintenance phase of this NHMP, seeking to identify cost effective actions that might be implemented to reduce community vulnerability.					
Drought Mitigation Strategies						
3.1	**Complete construction of a new 1-million gallon reservoir to ensure that the water quantity held in established water storage facilities is at an amount adequate for drought preparedness.**	**Local Funding Resources**	**City Public Works**	**City Administration, Jackson County Soil and Water Conservation District, OWRD**	**M**	**H**
Earthquake Mitigation Strategies						
4.1	Conduct public outreach on building safety through nonstructural improvements by providing public education opportunities.	Local Funding Resources, SRGP, PDM, HMGP	Public Works, City Planning	DLCD, OEM, DOGAMI	M	H
Emerging Infectious Disease Mitigation Strategies						
5.0	The steering committee, using available local resources, will study this hazard further during the implementation and maintenance phase of this NHMP, seeking to identify cost effective actions that might be implemented to reduce community vulnerability.					
Flood Mitigation **Strategies**						
6.1	**Ensure continued compliance in the National Flood Insurance Program (NFIP) through enforcement of local floodplain management ordinances.**	**Local Funding Resources**	**City Public Works**	**City Planning, City GIS, Jackson County, FEMA, NFIP, CRS/ISO, DLCD**	**L**	**L**

Action Item #	Mitigation Actions	Potential Funding Resources	Lead	Partners	Timeline	Cost
Landslide Mitigation Strategies						
7.1	Investigate the development and implementation of a city ordinance that restricts development on steep slopes.	Local funding resources, DLCD Technical Assistance Grant	City Planning	DLCD, DOGAMI	L	L
Severe Weather (Extreme Heat, Windstorm, Winter Storm) Mitigation Strategies						
8.1	Map areas where extreme weather, such as road icing and wind damage, occurs to inform a response plan for extreme weather events.	General Fund	City Public Works	County Roads	S	M
8.2	Identify facilities to open to the public during extreme heat and cold conditions.	General Fund	City Vegetation Management	Utility partners, ODOT, Public Works, USFS, BLM, ODF, Fire	O	M
Volcanic Event Mitigation Strategies						
9.0	The steering committee, using available local resources, will study this hazard further during the implementation and maintenance phase of this NHMP, seeking to identify cost effective actions that might be implemented to reduce community vulnerability.					
Wildfire Mitigation Strategies						
10.1	Partner with Jackson County on implementation of the Rogue Valley Integrated Community Wildfire Protection Plan and outreach projects.	Local Funding Resources, Fire and Rescue Districts, OEM, ODF	City Planning	City Administration, City Public Works, ODF, Jackson County, Rogue River Fire District, Bureau of Land Management - Medford District, Office of the State Fire Marshal	O	L-M

Action Item #	Mitigation Actions	Potential Funding Resources	Lead	Partners	Timeline	Cost
10.2	Sustain a fuel reduction program to address fuel loads along the Interstate Highway 5/railway corridor, Wards Creek, and Evans Creek. Identify resources to assist property owners in these areas with fuel reduction.	Local Funding Resources, Fire and Rescue Districts, OEM, ODF	City Public Works	City Administration, ODF, Jackson County, Rogue River Fire District, Bureau of Land Management - Medford District, Office of the State Fire Marshal	O	M
10.3	Install new fire hydrants and replace outdated fire hydrants with low water flow to ensure adequate fire hydrant coverage within the city.	Local Funding Resources, Fire and Rescue Districts, USDA	City Public Works	Jackson County, Rogue River Fire District	O	H
10.4	**Identify key utility system components that lack back up power sources, design and implement reliable back up power supply system.**	**Local Funding Resources**	**City Public Works**	**City Administration, City Public Works, City Police**	**S**	**M**

Source: Rogue River NHMP Steering Committee, updated 2023
Cost: L – Low (less than $50,000), M - Medium ($50,000-$100,000), H - High (more than $100,000)
Timing: O-Ongoing (continuous), S-Short (1-2 years), M-Medium (3-5 years), L-Long (5 or more years)
Priority Actions: Identified with **bold** text and **orange** highlight

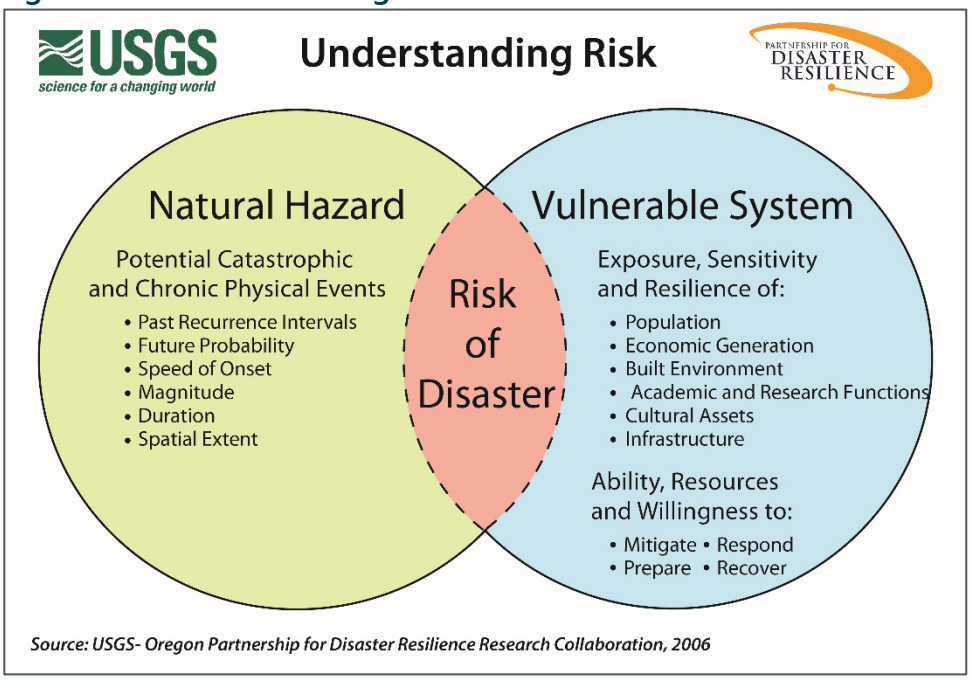
Risk Assessment

This section of the NHMP addendum addresses 44 CFR 201.6(b)(2) - Risk Assessment. In addition, this chapter can serve as the factual basis for addressing Oregon Statewide Planning Goal 7 – Areas Subject to Natural Hazards. Assessing natural hazard risk has three phases:

- **Phase 1:** Identify hazards that can impact the jurisdiction. This includes an evaluation of potential hazard impacts – type, location, extent, etc.
- **Phase 2:** Identify important community assets and system vulnerabilities. Example vulnerabilities include people, businesses, homes, roads, historic places and drinking water sources.
- **Phase 3:** Evaluate the extent to which the identified hazards overlap with or have an impact on, the important assets identified by the community.

The local level rationale for the identified mitigation strategies (action items) is presented herein and within Volume I, Sections 2 and 3. The risk assessment process is graphically depicted in Figure RA-1. Ultimately, the goal of hazard mitigation is to reduce the area of risk, where hazards overlap vulnerable systems.

Figure RA-1 Understanding Risk



Hazard Analysis

The Rogue River steering committee developed their hazard vulnerability assessment (HVA), using their previous HVA and the County's HVA (Volume II, Appendix C) as a reference. Changes from the County's HVA were made where appropriate to reflect distinctions in

vulnerability and risk from natural hazards unique to Rogue River, which are discussed throughout this addendum.

Table RA-2 shows the HVA matrix for Rogue River listing each hazard in order of rank from high to low. For local governments, conducting the hazard analysis is a useful step in planning for hazard mitigation, response, and recovery. The method provides the jurisdiction with sense of hazard priorities but does not predict the occurrence of a particular hazard.

One catastrophic hazard (Cascadia Subduction Zone earthquake) and two chronic hazards (wildfire and emerging infectious disease) rank as the top hazard threats to the City (Top Tier). Extreme heat, air quality, winter storm, windstorm, and landslide comprise the next highest ranked hazards (Middle Tier), while flood, drought, crustal earthquake and volcanic comprise the lowest ranked hazards (Bottom Tier).

Table RA-2 Hazard Analysis Matrix – Rogue River

Hazard	History	Vulnerability	Maximum Threat	Probability	Total Threat Score	Hazard Rank	Hazard Tiers
Wildfire	20	40	80	70	210	#1	*Top Tier*
Earthquake - Cascadia	2	50	100	49	201	#2	
Emerging Infectious Disease	16	25	100	49	190	#3	
Extreme Heat Event	20	25	70	70	185	#4	*Middle Tier*
Air Quality	18	40	60	63	181	#5	
Winter Storm	20	20	70	70	180	#6	
Windstorm	20	20	60	70	170	#7	
Landslide	14	35	60	56	165	#8	
Flood	16	20	70	49	155	#9	*Bottom Tier*
Drought	20	15	50	63	148	#10	
Earthquake (Crustal)	2	25	50	21	98	#11	
Volcanic Event	2	5	50	7	64	#12	

Source: Rogue River NHMP Steering Committee, 2023.

Community Characteristics

Table RA-5 and the following section provides information on City specific demographics and assets. For additional information on the characteristics of Rogue River, in terms of geography, environment, population, demographics, employment and economics, as well as housing and transportation see Volume I, Section 2. Many of these community characteristics can affect how natural hazards impact communities and how communities choose to plan for natural hazard mitigation. Considering the City specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation.

Rogue River is in Jackson County in southwestern Oregon. The City has grown steadily since its incorporation in 1912 and has an area today of 0.97 square miles. It is in the northern region of the county, located about 3.5 miles east of the Josephine County border and about 20 miles northwest of the City of Medford. The City and most of Jackson County is within the Rogue watershed.

Rogue River experiences a relatively mild climate with four distinct seasons that comes from its position on the west coast of North America and within the mountains of the region. The town is just off of Interstate 5 and about 50 miles north of the California border and in the heart of the Rogue Valley at approximately 1,000 feet above sea level. Rogue River has a climate somewhat intermediate to central California and northern Oregon. The city averages about 18.5 inches of rain per year due to being inland from the coast and in the rain shadow of the nearby mountains.[2] October through May are the wettest months (averaging 15 inches of rain during this period).The average daily high temperature in the city is between 45- and 55-degrees Fahrenheit (F) in the winter and between 80- and 95-degrees Fahrenheit (F) in the summer.

Population and Income

Between 2016 and 2021 the City grew by 235 people (10%). According to the State's official coordinated population forecast, between 2021 and 2040 the City's population is forecast to increase by 48% to 3,602. Most of the population is White/Caucasian (93%) and about 4% of the population is Hispanic or Latino. The median household income is significantly lower than the state average (47% lower than Oregon's median of $71,562). The poverty rate is 16% (10% for Seniors), 4% do not have health insurance, and 49% of owners and renters pay more than 30% of their household income on rent. The city has an educated population with 87% of residents 25 years and older holding a high school degree; 15% have a bachelor's degree or higher. Approximately 27% of the population lives with a disability (39% of population 65 and older), and 51% are either below 18 (16%) or over 65 (35%) years of age. About 28% of the population are 65 or older and living alone and 4% are single parents.

For more information see Volume I, Section 2.

Transportation, Housing, and Infrastructure

In the City of Rogue River, transportation has played a major role in shaping the community. Rogue River's commercial areas developed along primary routes and residential development followed nearby.

Today, mobility, or lack thereof due to heavy traffic, plays an important role in Rogue River and the daily experience of its residents and businesses as they move from point A to point B. The current railroad system is serviced through the Union Pacific Railroad system and the Central Oregon and Pacific Railroad (CORP) route. The Rogue Valley Transportation District (RVTD) provides commuter transit service Monday through Friday via their Rogue Valley Commuter Line. By far, motor vehicles represent the dominant mode of travel through and within Rogue River. Thirty-five percent (35%) of renters and 63% of owners have two or more vehicles (13% of renters do not have access to a car). Most workers commute alone in private vehicles (79%), while 13% work from home, 8% carpool, and 1% bicycle or walk to work.

[2] NOAA. National Centers for Environmental Information. Summary of Monthly Normals (1991-2010). Station: MEDFORD ROGUE VLY AP, OR US USW0002422. https://www.ncei.noaa.gov/access/services/data/v1?dataset=normals-monthly-1991-2020&startDate=0001-01-01&endDate=9996-12-31&stations=USW00024225&format=pdf

The City of Rogue River includes a diversity of land uses but is zoned primarily residential. The city's Comprehensive Plan identifies land use needs within the city and its urban growth boundary (see zoning map). New development has complied with the standards of the Oregon Building Code and the city's development code including their floodplain ordinance.

Over half of housing units are single-family and 19% are mobile homes. Most homes (69%) were built before 1990. Newer homes are more likely to be built to current seismic, flood, wildfire, and other hazard standards. Half of housing units are owner occupied, 38% are renter occupied, and 12% are vacant.

Economy

A diverse range of businesses have chosen to locate in Rogue River. Rogue River's location on Interstate 5 and its proximity to the Medford Airport give it market access that is more favorable than usual for a rural town.

About 36% of the resident population 16 and over is in the labor force (614 people) and are employed in a variety of occupations including construction, extraction, and maintenance (13%), office and administrative (13%), management, business, and financial (12%), professional and related (9%), and healthcare support (9%).

Most workers residing in the city (92%, 790 people) travel outside of the city for work primarily to Medford, Grants Pass, and surrounding areas.[3] A significant population of people travel to the city for work, (91% of the workforce, 674 people) primarily from Grants Pass, Medford, and surrounding areas.[4]

[3] U.S. Census Bureau. LEHD Origin-Destination Employment Statistics (2002-2020). Longitudinal-Employer Household Dynamics Program, accessed on August 17, 2023 at https://onthemap.ces.census.gov.

[4] Ibid.

Table RA-5 Community Characteristics

Population Characteristics		
2016 Population Estimate	2,200	
2021 Population Estimate	2,435	
2040 Population Forecast*	3,602	
Race		
American Indian and Alaska Native		3%
Asian		1%
Black/ African American		0%
Native Hawaiian and Other Pacific Islander		0%
White		93%
Some Other Race		1%
Two or More Races		3%
Hispanic or Latino/a (of any race)		4%
Limited or No English Spoken	23	3%
Vulnerable Age Groups		
Less than 5 Years	35	2%
Less than 18 Years	274	16%
65 Years and Older	601	35%
85 Years and Older	109	6%
Age Dependency Ratio		104.3
Disability Status (Percent age cohort)		
Total Disabled Population	468	27%
Children (Under 18)	18	7%
Working Age (18 to 64)	217	26%
Seniors (65 and older)	233	39%

Household Characteristics		
Housing Units		
Single-Family (includes duplexes)	554	55%
Multi-Family	258	26%
Mobile Homes (includes RV, Van, etc.)	191	19%
Household Type		
Family Household	461	53%
Married couple (w/ children)	115	13%
Single (w/ children)	36	4%
Living Alone 65+	245	28%
Year Structure Built		
Pre-1970	180	18%
1970-1989	509	51%
1990-2009	287	31%
2010 or later	27	3%
Housing Tenure and Vacancy		
Owner-occupied	497	50%
Renter-occupied	379	38%
Seasonal	6	1%
Vacant	121	12%
Vehicles Available (Occupied Units)		
No Vehicle (owner occupied)	16	3%
Two+ vehicles (owner occupied)	313	63%
No Vehicle (renter occupied)	48	13%
Two+ vehicles (renter occupied)	133	35%

Income Characteristics		
Households by Income Category		
Less than $15,000	169	19%
$15,000-$29,999	222	25%
$30,000-$44,999	162	18%
$45,000-$59,999	95	11%
$60,000-$74,999	66	8%
$75,000-$99,999	94	11%
$100,000-$199,999	68	8%
$200,000 or more	-	0%
Median Household Income		$33,704
Gini Index of Income Inequality		0.43
Poverty Rates (Percent age cohort)		
Total Population	277	16%
Children (Under 18)	15	6%
Working Age (18 to 64)	200	24%
Seniors (65 and older)	62	10%
Housing Cost Burden (Cost > 30% of household income)		
Owners with a Mortgage	243	49%
Owners without a Mortgage	46	9%
Renters	185	49%

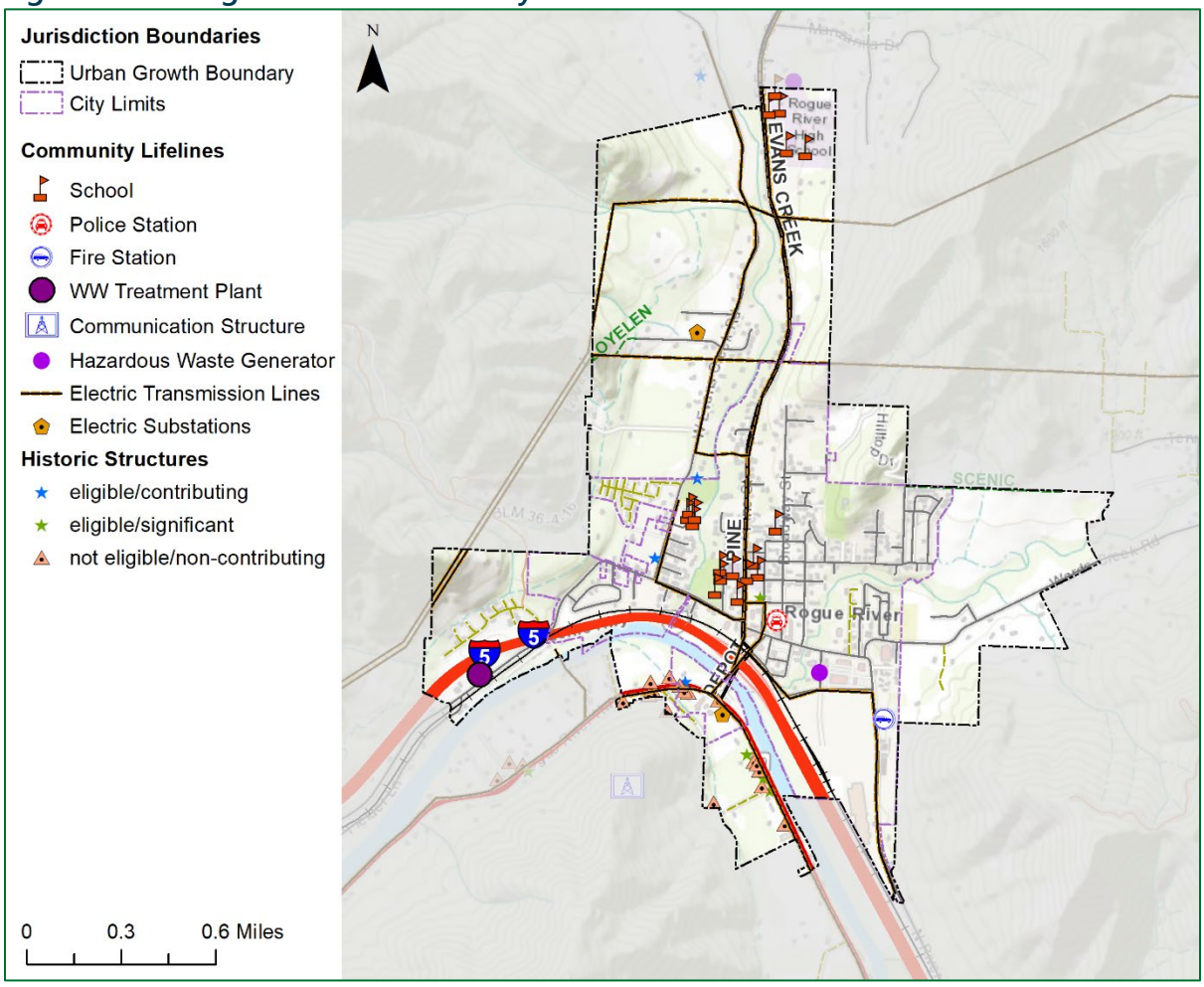
Employment Characteristics		
Labor Force (Population 16+)		
In labor Force (% Total Population)	614	36%
Unemployed (% Labor Force)	73	12%
Occupation (Top 5) (Employed 16+)		
Construction, Extraction, & Maint.	70	13%
Office & Administrative	69	13%
Management, Business, & Financial	67	12%
Professional & Related	51	9%
Healthcare Support	50	9%
Health Insurance		
No Health Insurance	71	4%
Public Health Insurance	1,112	65%
Private Health Insurance	1,009	59%
Transportation to Work (Workers 16+)		
Drove Alone	424	79%
Carpooled	41	8%
Public Transit	0	0%
Motorcycle	0	0%
Bicycle/Walk	4	1%
Work at Home	68	13%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates; Portland State University, Population Research Center, "Annual Population Estimates, Table 4", 2016 and 2021; and"Population Forecasts, Summary Tab", 2022.
Note 1: * = Population forecast within UGB
Note 2: ACS 5-year estimates represent average characteristics from 2017-2021. Sampling error may result in low reliability of data. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user. Refer to the original source documentation to better understand the data sources, results, methodologies and limitations of each dataset presented.

Community Assets

This section outlines the resources, facilities, and infrastructure that, if damaged, could significantly impact the public safety, economic conditions, and environmental integrity of Rogue River. Community lifelines and historic structures in Rogue River are shown in Figure RA-2 and Table RA-3. FEMA developed the Community Lifelines construct for objective-based response to prioritize the rapid stabilization of these facilities after a disaster. Mitigating these facilities will increase the community's resilience.

Figure RA-2 Rogue River Community Lifelines and Historic Structures



Source: Oregon Partnership for Disaster Resilience, Oregon Department of Geology and Mineral Industries.

Table RA-3 Rogue River Community Lifelines

Facility Name	Community Lifeline Category	Lifeline Type	Earthquake-Liquefaction Hazard	Flood Hazard	Landslide Hazard	Wildfire Hazard
Substation	energy	substation	moderate	100-Year	low	low
West Evans Creek and Lloyellan Substation	energy	substation	low		low	low
Kens Auto Body & Paint	hazardous materials	hazardous waste producer	low	500-Year	low	low
Mustard Seed School	safety and security	school	low	500-Year	low	low
Rogue River Elementary School	safety and security	school	low		low	low
Rogue River Middle School	safety and security	school	low	500-Year	low	moderate
Rogue River Police Department	safety and security	police station	low		low	low
Rogue River RFPD	safety and security	fire station	none		low	low
South Valley Academy	safety and security	school	low		low	low

Source: Oregon Department of Geology and Mineral Industries, Rogue River NHMP Steering Committee

Critical Facilities

Facilities that are critical to government response and recovery activities (i.e., life, safety, property, and environmental protection). These facilities include: 911 Centers, Emergency Operations Centers, Police and Fire Stations, Public Works facilities, sewer and water facilities, hospitals, bridges, roads, shelters, and more. Facilities that, if damaged, could cause serious secondary impacts may also be considered "critical." A hazardous material facility is one example of this type of critical facility.

Fire Stations:

- Rogue River Fire District #1 (EOC)

Law Enforcement:

- Police Department

City Buildings:

- Community Center
- City Hall

Private:

- Ray's Food Place
- Dollar General
- Main Building Supply (Ace)
- Murphy Plywood
- Rogue River Pharmacy
- Lil' Pantry
- Circle K

Essential Facilities

Facilities that are essential to the continued delivery of key government services and/or that may significantly impact the public's ability to recover from the emergency. These facilities may include City buildings such as the Public Services Building, the City Hall, and other public facilities such as schools.

Hospitals/Immediate Medical Care Facilities:

- Rogue River Family Practice Clinic
- Rogue River Veterinary Hospital
- Animal Clinic of Rogue River

Public Schools:

- Rogue River Elementary (east)
- Rogue River Elementary (west)
- Rogue River High
- Rivers Edge Academy Charter School

Potential Shelter Sites:

- Church of Christ of Rogue River
- All Rogue River Schools
- Hope Presbyterian Church
- Rogue Valley Community Church
- Rogue River 2 Foursquare Church
- Jehovah's Witness
- New Beginnings
- Faith Lutheran
- Russian Orthodox

City/ County/Other Buildings:

- Library
- Chamber of Commerce and Visitor Center

Infrastructure:

Infrastructure that provides services for the City includes:

Transportation Networks:

- Highway 99/Rogue River Hwy
- Foothill Blvd
- E Main St
- Interstate 5
- Wards Creek Rd
- W Evans Creek Rd
- Pine St/E Evans
- N River Rd

Water Facilities:

- 2 well-fed reservoirs
- Water Treatment Plant (1994)
- Waste Water Treatment Plant (1997)
- Raw Water Intake Facility
- Water Distribution System including over 13 miles of piping
- Wastewater Collection System including 6 sewer lift stations and over 10 miles of piping

Special Service Districts:

- Southern Oregon Education Service District
- Rogue River School District #35
- Rogue River Fire District #1
- Grants Pass Irrigation District
- Gold Hill Irrigation District

Private Utilities:

- Southern Oregon – Pacific Power
- Avista – Natural Gas
- Charter – Cable
- Hunter – Fiber
- AT&T – Fiber
- Century Link - Phone

Hazard Profiles

The following sections briefly describe relevant information for each profiled hazard. More information on Jackson County hazards can be found in Volume 1, Section 2 *Risk Assessment* and in the Risk Assessment for Region 4, Southwest Oregon, Oregon SNHMP (2020).

Air Quality

The steering committee determined that the City's probability for poor air quality is **high** (which is the same as the County's Rating) and that their vulnerability to poor air quality is also **high** (which is the same as the County's Rating). *This hazard was not assessed in the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of air quality hazards, history, how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event. Increases in wildfire conditions have shown an increasing potential for air quality hazards.

Future Projections

According to the Oregon Climate Change Research Institute "Future Climate Projections, Jackson County,"[5] climate change is expected to reduce outdoor air quality. Warmer temperatures may increase ground-level ozone concentrations, while increases in the number and size of wildfires may increase concentrations of smoke and fine particulate matter. Moreover, increases in pollen abundance and the duration of the pollen season may increase aeroallergens. Such poor air quality is expected to exacerbate allergy and asthma conditions and increase the incidence of respiratory and cardiovascular illnesses and death. In Jackson County, the number of smoke wave days is projected to decrease by 20%, but the intensity of smoke on those days is projected to increase by 81%.

Increasingly poor outdoor air quality will have exponentially high impacts upon those living in older homes, manufactured housing, RVs, and campgrounds, or the unhoused. The need to install new or upgraded air conditioning systems or HVAC filtration systems will impact the cost of housing.

Additional information on poor air quality can be found in Volume I, Section 2.

Drought

The steering committee determined that the City's probability for drought is **high** (which is the same as the County's rating) and that their vulnerability to drought is **low** (which is lower than the County's rating). *The probability rating stayed the same and the vulnerability rating decreased since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of drought hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and

[5] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

probability of a potential event. Due to the climate of Jackson County, past and present weather conditions have shown an increasing potential for drought.

The City receives its main water supply directly from the Rogue River and established local wells. For more information on the future of Rogue River's water supply visit their website.

Future Projections
According to the Oregon Climate Change Research Institute "Future Climate Projections, Jackson County,"[6] drought, as represented by low summer soil moisture, low spring snowpack, low summer runoff, and low summer precipitation, is projected to become more frequent in Jackson County by the 2050s.

Increasingly frequent droughts will have economic and social impacts upon those who depend upon predictable growing periods (ranches, farms, vineyards, gardeners) as well as upon the price and availability of fresh vegetables. It may also stress local jurisdiction's ability to provide water for irrigation or commercial and household use.

Please review Volume I, Section 2 for additional information on this hazard.

Earthquake (Cascadia)

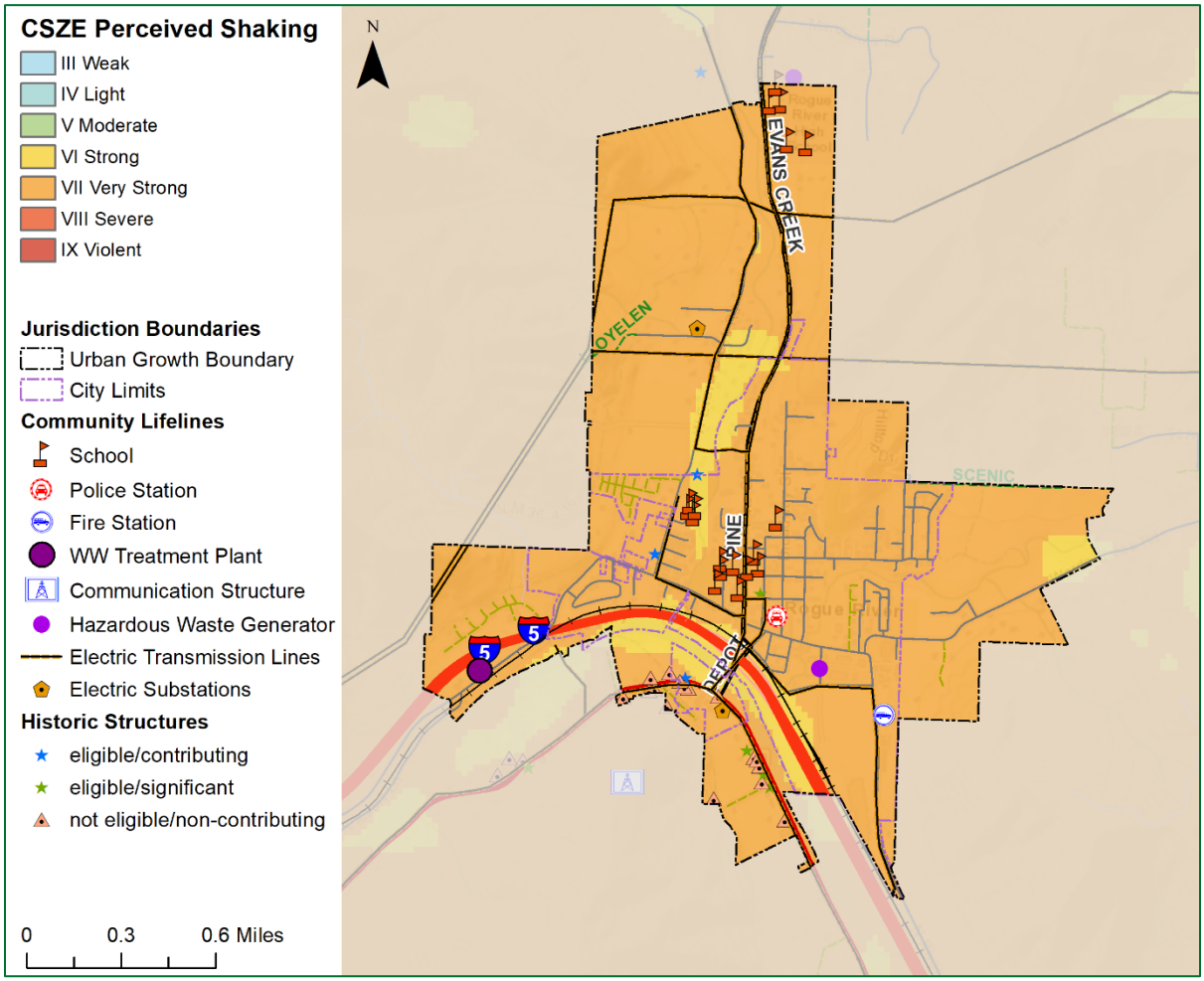
The steering committee determined that the City's probability for a Cascadia Subduction Zone (CSZ) earthquake is **moderate** (which is the same as the County's rating) and that their vulnerability to a CSZ earthquake is **high** (which is the same as the County's rating). *The probability rating decreased and the vulnerability rating stayed the same since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of earthquake hazards and their history, as well as the location, extent, and probability of a potential event. Generally, an event that affects the County is likely to affect Rogue River as well. The causes and characteristics of an earthquake event are appropriately described within Volume I, Section 2, as well as the location and extent of potential hazards. Previous occurrences are well documented within Volume I, Section 2 and the community impacts described by the County would generally be the same for Rogue River as well.

Figure RA-3 displays relative shaking hazards from a Cascadia Subduction Zone earthquake event. As shown in the figure below, the area of greatest concern within the City of Rogue River (darker areas) is along the river and mountainous areas.

[6] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

Figure RA-3 Cascadia Subduction Zone Perceived Shaking



Source: Oregon Partnership for Disaster Resilience. Oregon Department of Geology and Mineral Industries.
Note: To view detail click this link to access Oregon HazVu.

The local faults, the county's proximity to the Cascadia Subduction Zone, potential slope instability, and the prevalence of certain soils subject to liquefaction and amplification combine to give the County a high-risk profile. Due to the expected pattern of damage resulting from a CSZ event, the Oregon Resilience Plan divides the State into four distinct zones and places Jackson County predominately within the "Valley Zone" (Valley Zone, from the summit of the Coast Range to the summit of the Cascades). Within the Southwest Oregon region, damage and shaking is expected to be strong and widespread - an event will be disruptive to daily life and commerce and the main priority is expected to be restoring services to business and residents.[7]

As noted in the community profile, approximately 69% of residential buildings were built prior to 1990, which increases the City's vulnerability to the earthquake hazard. Information on specific public buildings' (schools and public safety) estimated seismic resistance, determined by DOGAMI in 2007, is shown in Table RA-4; each "X" represents one building

[7] Ibid.

within that ranking category. Of the facilities evaluated by DOGAMI using a Rapid Visual Survey (RVS), three (3) have a high (greater than 10% chance) collapse potential and zero (0) have a very high (100% chance) collapse potential.

In addition to building damages, utility (electric power, water, wastewater, natural gas), and transportation systems (bridges, pipelines) are also likely to experience significant damage. There is a low probability that a major earthquake will result in failure of upstream dams.

Utility systems will be significantly damaged, including damaged buildings and damage to utility infrastructure, including water and wastewater treatment plants and equipment at high voltage substations (especially 230 kV or higher which are more vulnerable than lower voltage substations). Buried pipe systems will suffer extensive damage with approximately one break per mile in soft soil areas. There would be a much lower rate of pipe breaks in other areas. Restoration of utility services will require substantial mutual aid from utilities outside of the affected area.

Table RA-4 Rapid Visual Survey Scores

Facility	Site ID*	Level of Collapse Potential			
		Low (< 1%)	Moderate (>1%)	High (>10%)	Very High (100%)
Schools					
Evans Valley School (Rogue River SD 35) (8205 E Evans Creek Rd) - CLOSED	Jack_sch50	X		X	
Rogue River East Elementary (Rogue River SD 35) (300 Pine St) - **See Mitigation Successes**	Jack_sch20	X, X	X	X	
Rogue River High (Rogue River SD 35) (1898 E Evans Creek Rd)	Jack_sch22		X,X		
Rogue River West Elementary (Rogue River SD 35) (301 Pine St) - **See Mitigation Successes**	Jack_sch21			X	
Public Safety					
Rogue River Police (133 Broadway)	Jack_pol02	X			

Source: Oregon Partnership for Disaster Resilience. Oregon Department of Geology and Mineral Industries.

Note: To view detail click this link to access Oregon HazVu.

Earthquake (Crustal)

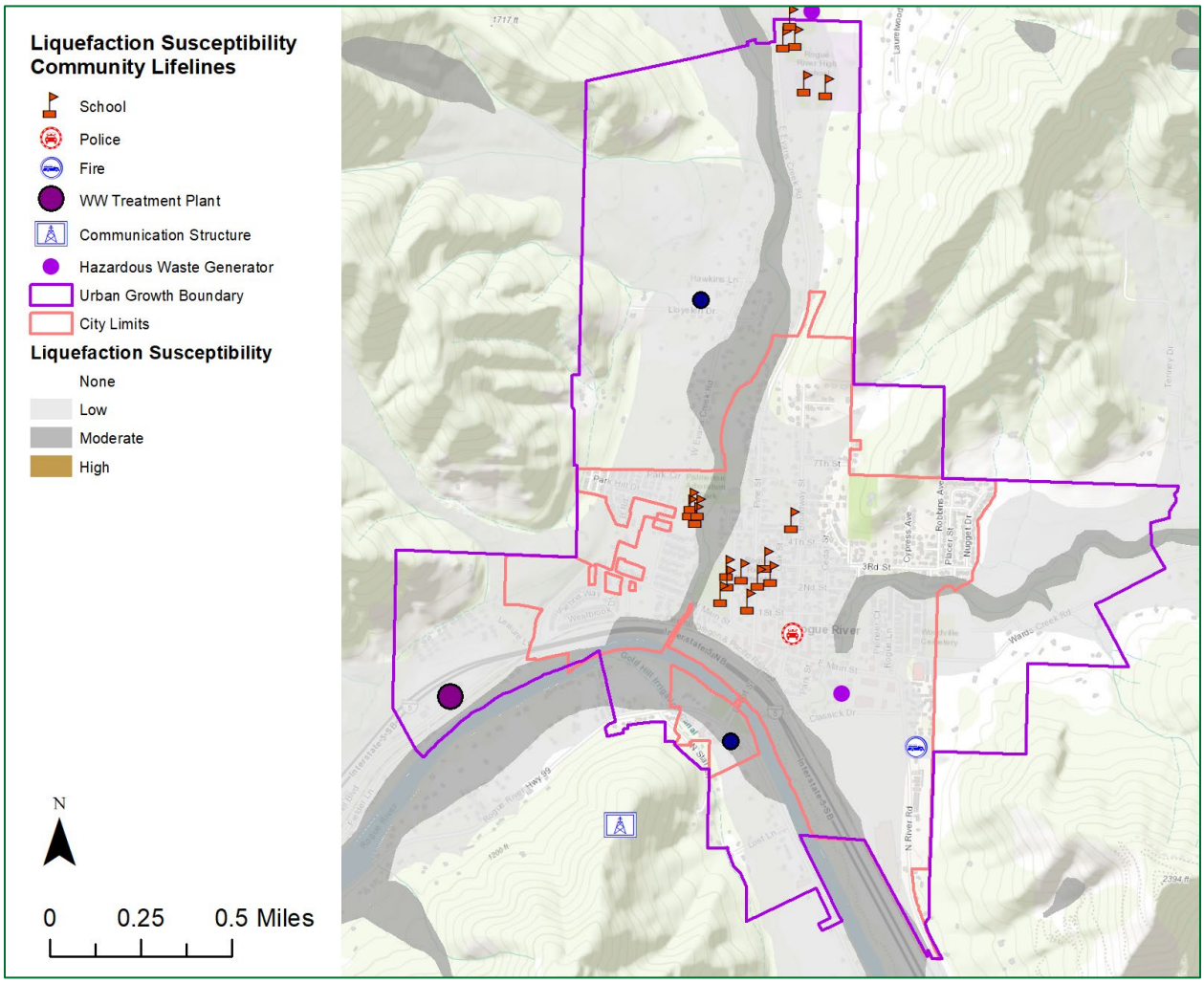
The steering committee determined that the City's probability for a crustal earthquake is low (which is the same as the County's rating) and that their vulnerability to crustal earthquake is moderate (which is higher than the County's rating). *These ratings have not changed since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of earthquake hazards and their history, as well as the location, extent, and probability of a potential event. Generally, an event that affects the County is likely to affect Rogue River as well. The causes and characteristics of an earthquake event are appropriately described within Volume I, Section 2, as well as the location and extent of potential hazards. Previous occurrences are well-documented within

Volume I, Section 2 and the community impacts described by the County would generally be the same for Rogue River as well.

Figure RA-4 shows the liquefaction risk to the community lifelines that were identified in Table RA-3 as well as the state historic building inventory.

Figure RA-4 Liquefaction Susceptibility



Source: Oregon Partnership for Disaster Resilience. Oregon Department of Geology and Mineral Industries.
Note: To view detail click this link to access Oregon HazVu.

Earthquake-induced damages are difficult to predict and depend on the size, type, and location of the earthquake, as well as site-specific building and soil characteristics. Presently, it is not possible to accurately forecast the location or size of earthquakes, but it is possible to predict the behavior of soil at any site. In many major earthquakes, damages have primarily been caused by the behavior of the soil.

Vulnerability Assessment

Due to insufficient data and resources, Rogue River is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Identified Community Lifelines that are exposed to this hazard are shown in Table EA-6. Note that even if a facility

has exposure*, it does not mean there is a high risk (vulnerability).* No development changes affected the jurisdiction's overall vulnerability to this hazard.

Future Projections
Future development (residential, commercial, or industrial) within Jackson County will be at risk to earthquake impacts, although this risk can be mitigated by the adoption and enforcement of high development and building standards. Reducing risks to vulnerable populations should be considered during the redevelopment of existing properties.

Please review Volume I, Section 2 for additional information on this hazard.

Emerging Infectious Disease

The steering committee determined that the City's probability for emerging infectious disease is moderate (which is the same as the County's rating) and that their vulnerability is moderate (which is higher than the County's rating). *The probability rating stayed the same and the vulnerability rating decreased since the previous version of this NHMP.*

Emerging infectious diseases are those that have recently appeared in a population or those whose incidence or geographic range is rapidly increasing or threatens to increase. Emerging infections may be caused by biological pathogens (e.g., virus, parasite, fungus, or bacterium) and may be: previously unknown or undetected biological pathogens, biological pathogens that have spread to new geographic areas or populations, previously known biological pathogens whose role in specific diseases was previously undetected, and biological pathogens whose incidence of disease was previously declining but whose incidence of disease has reappeared (re-emerging infectious disease).[8]

Volume I, Section 2 describes the characteristics of emerging infectious disease and their history, as well as the location, extent, and probability of a potential event within the region. Generally, an event that affects the County is likely to affect the City as well.

Future Projections
Vulnerable populations within Jackson County, including children, elderly, those living with disabilities, and unhoused individuals, will be a greater risk to emerging infectious diseases in the future.

Please review Volume I, Section 2 for additional information on this hazard.

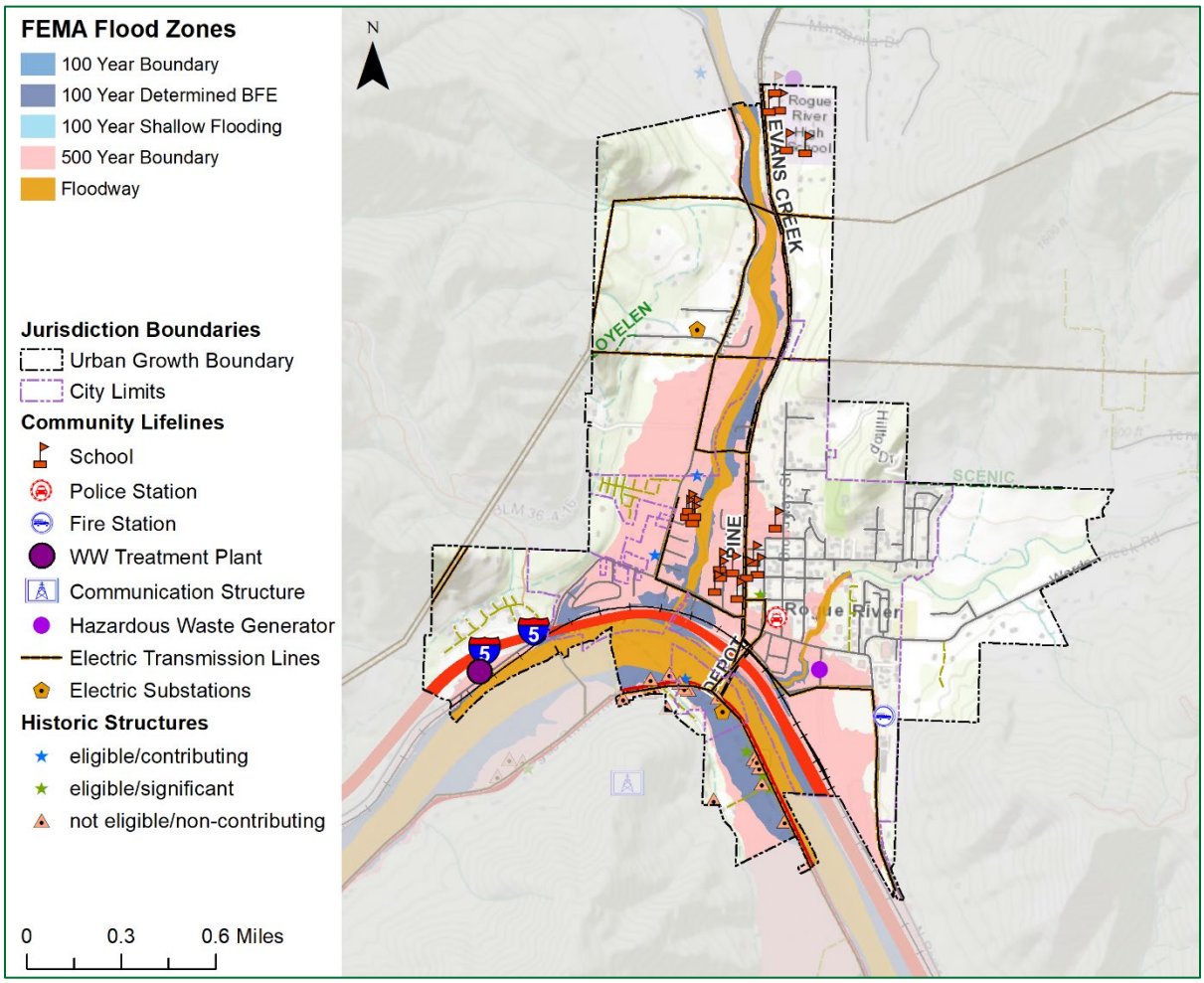
Flood

The steering committee determined that the City's probability for flood is moderate (which lower than the County's rating) and that their vulnerability to flood is moderate (which is higher than the County's rating). *The probability rating decreased and the vulnerability rating stayed the same since the previous version of this NHMP.*

[8] Baylor College of Medicine, *Emerging Infectious Disease*, URL: https://www.bcm.edu/departments/molecular-virology-and-microbiology/emerging-infections-and-biodefense/emerging-infectious-diseases, accessed September 17, 2017.

Volume I, Section 2 describes the characteristics of flood hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event. Portions of Rogue River have mapped FEMA flood zones closely concentrated around the Rogue River corridor, contouring I-5, including areas along Evans Creek and Ward Creek (Figure RA-5). Furthermore, other portions of Rogue River, outside of the mapped floodplains, are also subject to flooding from local storm water drainage.

Figure RA-5 FEMA Flood Zones



Source: Oregon Partnership for Disaster Resilience. Oregon Department of Geology and Mineral Industries.
Note: To view detail click this link to access Oregon HazVu.

The Rogue River is the chief source of flooding in the City of Rogue River. The river, which has its origins in the Rogue River National Forest south of the City and flows from East to West. Evans Creek runs north-south out of the northern portion of Rogue River, with the smaller Ward Creek flowing through the northeastern portion of the City. During the 1964 and 1997 floods the City experienced flood inundation and damage in areas near the river including an RV park, Fleming Park and downtown. The City also experienced flooding in the 2006 flood, but without significant damages. The areas of Rogue River that are particularly flood prone

include “the areas just south of and west of the Depot Street Bridge over the Rogue River, along the Rogue River and an area just west of Evans Creek, near its mouth” (Figure RA-5).[9]

The City is at risk from two types of flooding: riverine and urban. Riverine flooding occurs when streams overflow their banks and inundate low-lying areas. This is a natural process that adds sediment and nutrients to fertile floodplain areas. It usually results from prolonged periods of precipitation over a wide geographic area. Most areas are generally flooded by low velocity sheets of water. Urban flooding occurs as land is converted to impervious surfaces and hydrologic systems are changed. Precipitation is collected and transmitted to streams at a much faster rate, causing floodwaters that rise rapidly and peak with violent force. During urban flooding, storm drains can back up and cause localized flooding of streets and basements. These flooding events and subsequent damages are commonly caused by the behavior of Rogue River. Additional risks of flood are posed from Ward Creek and the Evans Creek, however, most of this flooding is due to backwater from the Rogue River.[10]

Vulnerability Assessment

Due to insufficient data and resources, Rogue River is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Identified community lifelines that are exposed to this hazard are shown in Table RA-1. Note that even if a facility has exposure*, it does not mean there is a high risk (vulnerability).* No development changes affected the jurisdiction’s overall vulnerability to this hazard.

Floods can have a devastating impact on almost every aspect of the community, including private property damage, public infrastructure damage and economic loss from business interruption. It is important for the City to be aware of flooding impacts and assess its level of risk.

The economic losses due to business closures often total more than the initial property losses that result from flood events. Business owners and their employees are significantly impacted by flood events. Direct damages from flooding are the most common impacts, but indirect damages, such as diminished clientele, can be just as debilitating to a business. Following the January 1997, flood businesses in Rogue River suffered direct damage from high water.

The FEMA Flood Insurance Study (January 19, 2018) has a brief history of flooding in Jackson County and Rogue River (Volume I, Section 2). The City’s water plant and four sewer pump stations are within the 100-year flood plain; the City’s wastewater plant and intake structures are just outside. Currently, there is no financial impact data available for this infrastructure.

Highway 99 (Rogue River Highway) and Interstate 5 are major transportation routes in the Rogue Valley. If major flooding affected all of the bridges in Rogue River, traffic flow in and out of the City would be significantly affected, but it would not cut off all avenues. The amount of property in the floodplain is not a large area but damage could be significant as it

[9] Jackson County Flood Insurance Study (May 3, 2011)

[10] Ibid.

would affect residential, commercial, and public property. Floodwaters can affect building foundations, seep into basements or cause damage to the interior, exterior, and contents of buildings, dependent upon the velocity and depth of the water and by the presence of floating debris. The City sewer system can overflow during flood events and cause further property damage.

For mitigation planning purposes, it is important to recognize that flood risk for a community is not limited only to areas of mapped floodplains. Other portions of Rogue River outside of the mapped floodplains may also be at relatively high risk from over bank flooding from streams too small to be mapped by FEMA or from local storm water drainage.

Future Projections

According to the Oregon Climate Change Research Institute (OCCRI report) "Future Climate Projections, Jackson County,"[11] winter flood risk at mid-elevations in Jackson County, where temperatures are near freezing during winter and precipitation is a mix of rain and snow, is projected to increase as winter temperatures increase. The temperature increase will lead to an increase in the percentage of precipitation falling as rain rather than snow. The projected increases in total precipitation, and in rain relative to snow, likely will increase flood magnitudes in the region. Vulnerable populations adjacent to floodways (including the unhoused, manufactured home communities, and campground occupants) will be more at risk as the winter flood risk increases.

National Flood Insurance Program (NFIP)

FEMA last updated the Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) in 2018 (effective January 19, 2018). Rogue River's Class Rating within the Community Rating System (CRS) is an 8. The City complies with the NFIP through enforcement of their flood damage prevention ordinance and their floodplain management program. Their flood prevention code section is based on the Oregon Model Flood Hazard Prevention code, which includes provisions addressing substantial improvement/substantial damage.

The Community Repetitive Loss record for Rogue River identifies two (2) Repetitive Loss Properties[12] (both single-family residences) and zero (0) Severe Repetitive Loss Properties.[13] Table RA-5 gives details for these properties. Figure RA-6 gives the general location of these properties.

[11] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

[12] A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than $1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A RL property may or may not be currently insured by the NFIP.

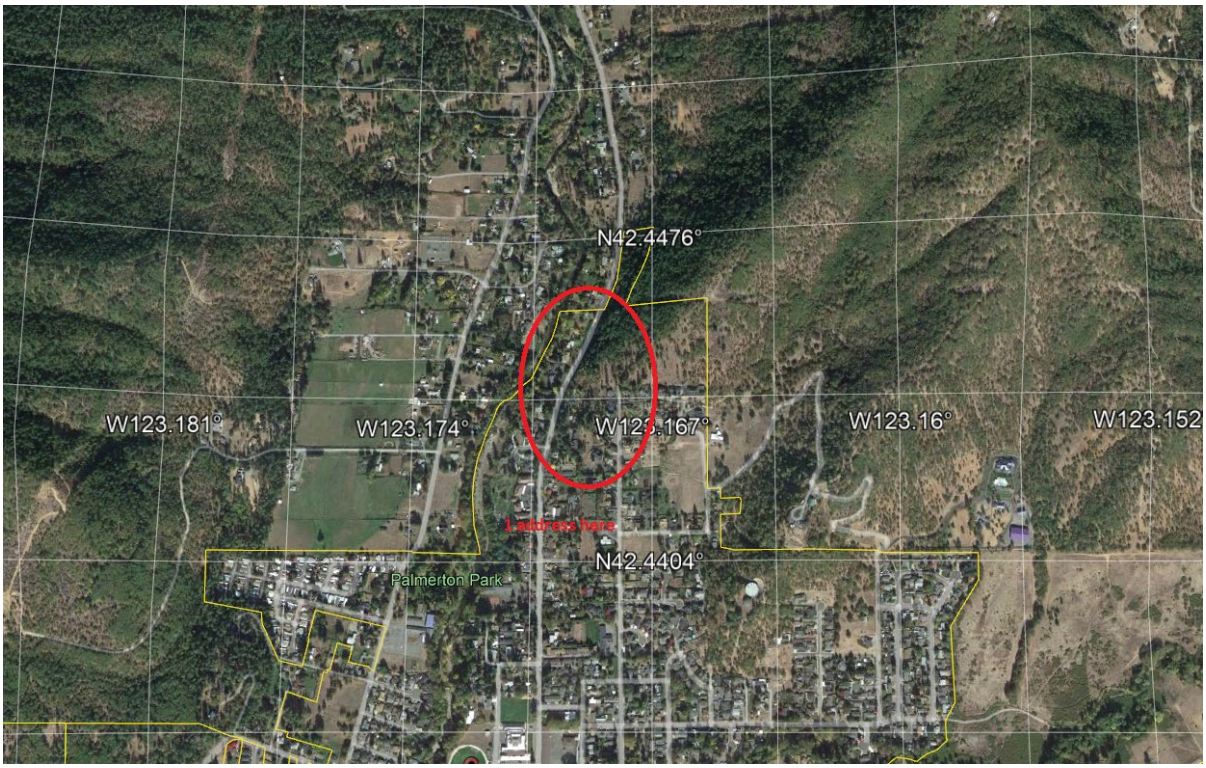
[13] A Severe Repetitive Loss (SRL) property is a single family property (consisting of 1 to 4 residences) that is covered under flood insurance by the NFIP and has incurred flood-related damage for which 4 or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding $5,000 and with cumulative amount of such claims payments exceeding $20,000; or for which at least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Table RA-5 *Rogue River* Repetitive *Loss* Properties

RL or SRL Property	Jurisdiction Name	Insured?	Flood Zone	Occupancy	Total Paid Claims	Total Paid Amount
RL	Rogue River	NO	AE	Single-Family	2	$101,179.58
RL	Rogue River	NO	B	Single-Family	2	$23,021.11
Total					4	$124,200.69

Source: FEMA Region X, Regional Flood Insurance Liaison, email February 13, 2023.

Figure RA-6 Rogue River Repetitive Loss Properties



Source: FEMA Region X, Regional Flood Insurance Liaison, email February 13, 2023.

Please review Volume I, Section 2 for additional information on this hazard.

Landslide

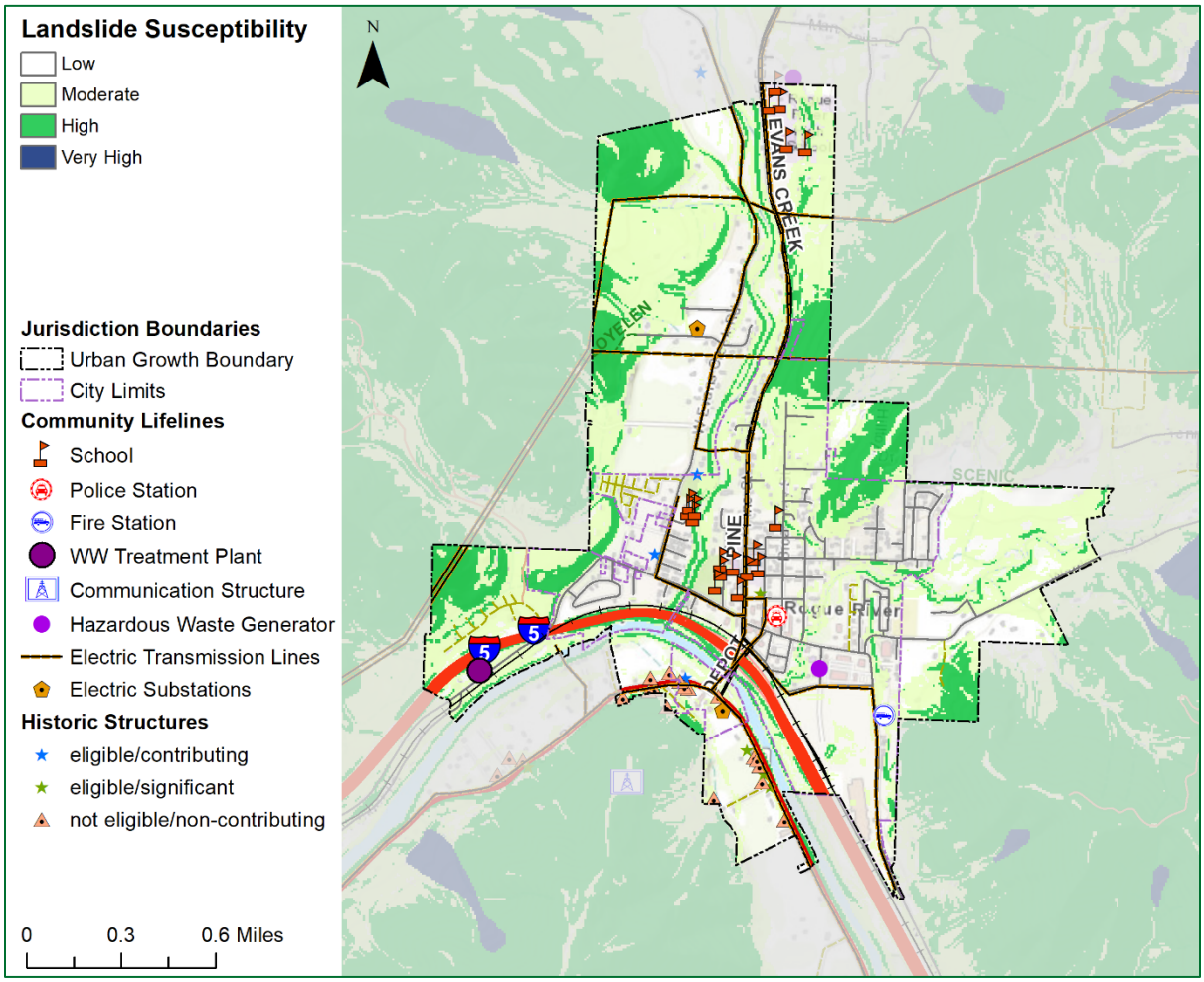
The steering committee determined that the City's probability for landslide is **high** (which is the same as the County's rating) and that their vulnerability to landslide is **moderate** (which is higher than the County's rating). *The probability and vulnerability ratings increased since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of landslide hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event within the region. The potential for landslide in Rogue River is low to moderate. However, critical transportation routes into the City may be susceptible to landslides.

Landslide susceptibility exposure for Rogue River is shown in Figure RA-7. Most of Rogue River demonstrates a low susceptibility to landslide exposure, with corridors of moderate susceptibility concentrated around the outer edges of Highway 99 and Interstate 5 and some areas of high susceptibility along the northern corridor of the Rogue River. Approximately 12% of Rogue River has high, and approximately 27% moderate, landslide susceptibility exposure.[14]

Note that even if a jurisdiction has a high percentage of area in a high or very high landslide exposure susceptibility zone, this does not mean there is a high risk, because risk is the intersection of hazard and assets.

Figure RA-7 Landslide Susceptibility Exposure



Source: Oregon Partnership for Disaster Resilience. Oregon Department of Geology and Mineral Industries.
Note: To view detail click this link to access Oregon HazVu.

Vulnerability Assessment

Due to insufficient data and resources, Rogue River is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Identified community lifelines that are exposed to this hazard are shown in Table RA-3. Note that even if a facility

[14] DOGAMI Open-File Report, O-16-02, Landslide Susceptibility Overview Map of Oregon (2016)

has exposure*, it does not mean there is a high risk (vulnerability).* No development changes affected the jurisdiction's overall vulnerability to this hazard.

Potential landslide-related impacts are adequately described within Volume I, Section 2 and include infrastructural damages, economic impacts (due to isolation and/or arterial road closures), property damages, and obstruction to evacuation routes. Rain-induced landslides and debris flows can potentially occur during any winter in Jackson County and thoroughfares beyond City limits are susceptible to obstruction as well.

The most common type of landslides in Jackson County are slides caused by erosion. Slides move in contact with the underlying surface, are generally slow moving and can be deep. Rainfall-initiated landslides tend to be smaller, while earthquake-induced landslides may be quite large. All soil types can be affected by natural landslide triggering conditions.

Future Projections
Landslides are often triggered by rainfall when the soil becomes saturated. As a surrogate measure of landslide risk, the Oregon Climate Change Research Institute (OCCRI report) report presents a threshold based on recent precipitation (cumulative precipitation over the previous 3 days) and antecedent precipitation (cumulative precipitation on the 15 days prior to the previous 3 days). By the 2050s under the higher emissions scenario, the average number of days per year in Jackson County on which the landslide risk threshold is exceeded is projected to remain about the same, with an increase of 0.2 days. However, landslide risk depends on multiple factors, and this metric, which is based on precipitation, does not reflect all aspects of the hazard. Additional triggers, such as earthquakes, wildfires, or development, can increase risks of landslides. Future development along slopes or adjacent to riverbanks will be a greater risk of impact from this hazard.

Please review Volume I, Section 2 for additional information on this hazard.

Severe Weather

Severe weather can account for a variety of intense and potentially damaging weather events. These events include windstorms and winter storms. The following section describes the unique probability and vulnerability of each identified weather hazard. Other more abrupt or irregular events such as hail are also described in this section.

Extreme Heat Event

The steering committee determined that the City's probability for extreme heat event is high (which is the same as the County's Rating) and that their vulnerability to an extreme heat event is moderate (which is the same as the County's Rating). *This hazard was not assessed in the previous version of this NHMP.*

Jackson County's NHMP Volume I, Section 2, adequately describes the causes and characteristics of extreme heat, as well as the history, location, extent, and probability of a potential event and, how extreme heat relates to future climate projections (see OCCRI report). Generally, an event that affects the County is likely to affect the City as well. A severe

heat episode or "heat wave" occurs about every two to three years, and typically lasting two to three days but can last as many as five days. A severe heat episode can be defined as consecutive days of temperatures in the high 90s and above 100. Severe heat hazard in Southern Oregon can be described as the average number of days with temperatures greater than or equal to 90-degrees Fahrenheit.[15]

Extreme heat events can and have occurred in the city, and while they typically do not cause loss of life; they are becoming more frequent and have the potential to impact economic activity as well as quality of life and have caused threat to life in some cases.

Future Projections

According to the Oregon Climate Change Research Institute (OCCRI report) "Future Climate Projections, Jackson County,"[16] average temperature is expected to continue increasing during the twenty-first century if global emissions of greenhouse gases continue. The number, duration, and intensity of extreme heat events will increase as temperatures continue to warm. In Jackson County, the number of extremely hot days (days on which the temperature is 90°F or higher) and the temperature on the hottest day of the year are projected to increase by the 2020s and 2050s. The number of days per year with temperatures 90°F or higher is projected to increase by an average of 28 days (range 12–38 days) by the 2050s, relative to the 1971–2000 historical baselines. The temperature on the hottest day of the year is projected to increase by an average of about 7°F (range 3–8°F) by the 2050s. Higher temperatures and longer/more extreme heat events will have negative impacts upon vulnerable populations such as those over 65+, children, those living in older or temporary housing, and field workers.

See the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Windstorm

The steering committee determined that the City's probability for windstorm is **high** (which is the same as the County's rating) and that their vulnerability to windstorm is **moderate** (which is the same as the County's rating). *These ratings have not changed since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of windstorm hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event within the region. Because windstorms typically occur during winter months, they are sometimes accompanied by ice, freezing rain, flooding, and very rarely, snow. Other severe weather events that may accompany windstorms, including thunderstorms, hail, lightning strikes, and tornadoes are generally negligible for Rogue River.

Volume I, Section 2 describes the impacts caused by windstorms, including power outages, downed trees, heavy precipitation, building damages, and storm-related debris. Additionally, transportation and economic disruptions result as well.

[15] DLCD. Oregon State Natural Hazard Mitigation Plan. 2020.

[16] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

Damage from high winds generally has resulted in downed utility lines and trees. Electrical power can be out anywhere from a few hours to several days. Outdoor signs have also suffered damage. If the high winds are accompanied by rain (which they often are), blowing leaves and debris clog drainage-ways, which in turn causes localized urban flooding.

Future Projections
Limited research suggests little if any change in the frequency and intensity of windstorms in the Northwest as a result of climate change. Those impacted by windstorms at present, including older residential or commercial developments with above-ground utilities, poor insulation or older construction, heavy tree canopies, or poor storm drainage, will continue to be impacted by windstorms in the future.

Please review Volume I, Section 2 for additional information on this hazard.

Winter Storm (Snow/Ice)

The steering committee determined that the City's probability for winter storm is **high** (which is the same as the County's rating) and that their vulnerability to winter storm is **moderate** (which is the same as the County's rating). *These ratings have not changed since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of winter storm hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event within the region. Severe winter storms can consist of rain, freezing rain, ice, snow, cold temperatures, and wind. They originate from troughs of low pressure offshore that ride along the jet stream during fall, winter, and early spring months. Severe winter storms affecting the City typically originate in the Gulf of Alaska or in the central Pacific Ocean. These storms are most common from November through March.

Major winter storms can and have occurred in the Rogue River area and while they typically do not cause significant damage, they are frequent and have the potential to impact economic activity. Road and rail closures due to winter weather are uncommon occurrences but can interrupt commuter and commercial traffic. The City maintains roads with sanding equipment and County snow plows.

Future Projections
According to the Oregon Climate Change Research Institute (OCCRI report) "Future Climate Projections, Jackson County,"[17] cold extremes will become less frequent and intense as the climate warms. In Jackson County, the number of cold days (maximum temperature 32°F or lower) per year is projected to decrease by an average of 3 days (range -2– -5 days) by the 2050s, relative to the 1971–2000 historical baselines, under the higher emissions scenario. The temperature on the coldest night of the year is projected to increase by an average of 6°F (range 3–9°F) by the 2050s. The intensity of extreme precipitation is expected to increase as the atmosphere warms and holds more water vapor. In Jackson County, the number of days per year with at least 0.75 inches of precipitation is not projected to change

[17] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

substantially. However, by the 2050s, the amount of precipitation on the wettest day and wettest consecutive five days per year is projected to increase by an average of 15% (range -3–32%) and 11% (range -3–34%), respectively. If these precipitation events occur in the winter, heavier winter storms with larger impacts upon transportation routes, vulnerable populations, and economic activity can be expected.

Please review Volume I, Section 2 for additional information on this hazard.

Volcanic Event

The steering committee determined that the City's probability for a volcanic event is low (which is the same as the County's rating) and that their vulnerability to a volcanic event is low (which is the same as the County's rating). *These ratings have not changed since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of volcanic hazards and their history, as well as the location, extent, and probability of a potential event within the region. Generally, an event that affects the County is likely to affect Rogue River as well. Rogue River is very unlikely to experience anything more than volcanic ash during a volcanic event.

Future Projections
Although the science of volcano predictions is improving, it remains challenging to predict a potential volcanic event. Ash fall, which will be the greatest impact, will impact the entire County. Impacts will be felt hardest by property managers (ranches, farmers, etc.) and by those relying upon clean surface water (for drinking water production and irrigation).

Please review Volume I, Section 2 for additional information on this hazard.

Wildfire

The steering committee determined that the City's probability for wildfire is high (which is the same as the County's rating) and that their vulnerability to wildfire is high (which is higher than the County's rating). *These ratings have not changed since the previous version of this NHMP.*

Volume I, Section 2 describes the characteristics of wildland fire hazards, history, and how they relate to future climate projections (see OCCRI report), as well as the location, extent, and probability of a potential event within the region. The location and extent of a wildland fire vary depending on fuel, topography, and weather conditions. There has been one large wildland event in Rogue River, the 2011 Tin Pan Peak Fire, a 300-acre fire that destroyed businesses as it approached Rogue River from the southeast. Additional wildfires occurred circa 1990 (Mill Fire) and August 1992 (East Evans Creek Fire; FM-2083). Weather and urbanization conditions are primarily at cause for the hazard level. Recent wildfires have threatened subdivisions and mobile home parks on the edge of the City.

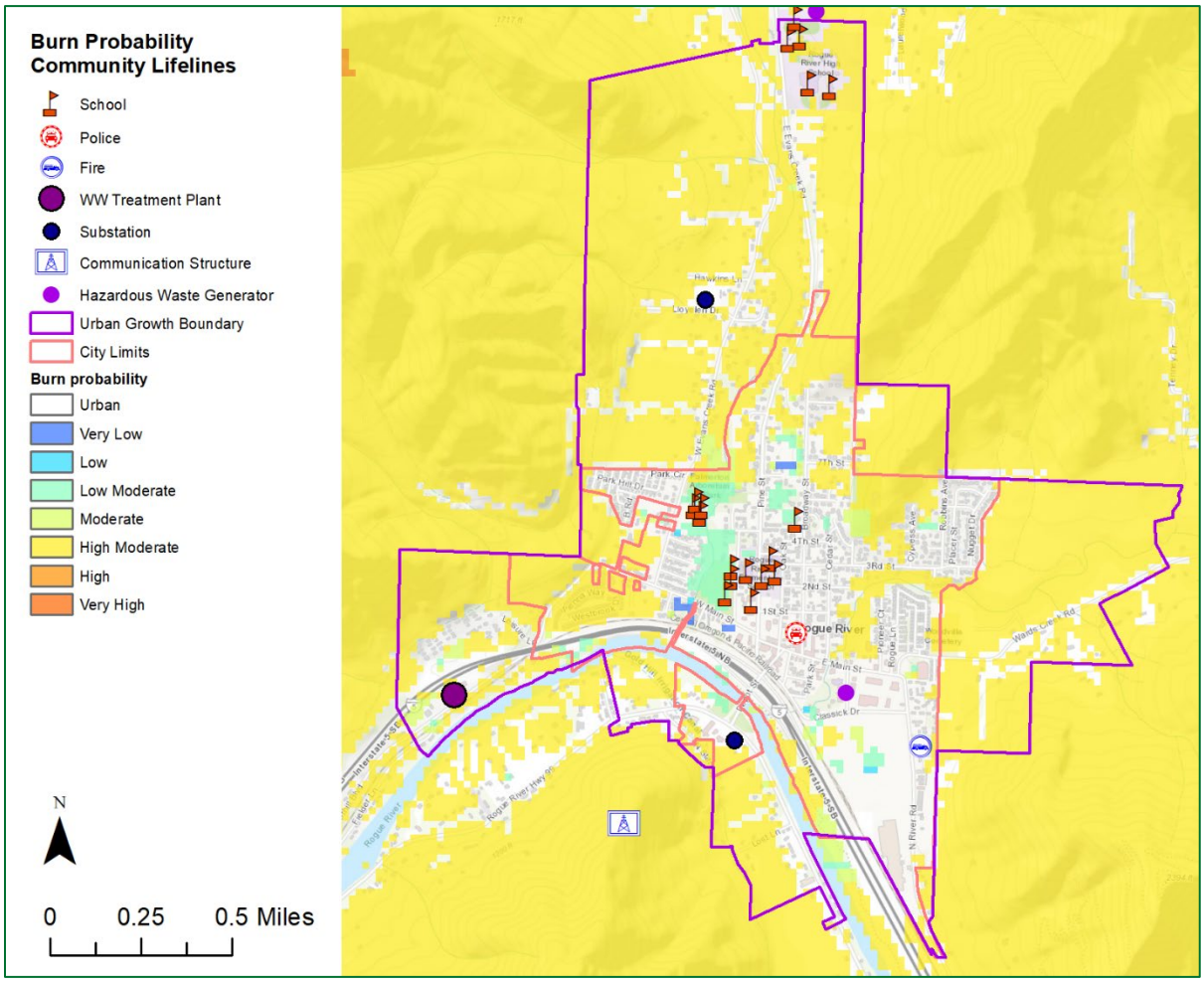
The potential community impacts and vulnerabilities described in Volume I, Section 2 are generally accurate for the City as well. The Rogue Valley Integrated Community Wildfire Protection Plan (RVIFP, updated 2019), assesses wildfire risk, maps wildland urban interface

areas, and includes actions to mitigate wildfire risk. The City is included in the RVIFP and will update the City's wildfire risk assessment if the fire plan presents better data during future updates (an action item is included within Volume I, Section 4 to participate in updates to the integrated fire plan and to continue to maintain and update their RVIFP). Rogue River is within an area of high wildfire prone urban landscape. Current wildfire mitigation activities include defensible space and fuels reduction projects. The City hereby incorporates the RVIFP into this addendum by reference to provide greater detail to sensitivity and exposure to the wildfire hazard.

Property can be damaged or destroyed with one fire as structures, vegetation, and other flammables easily merge to become unpredictable and hard to manage. Other factors that affect ability to effectively respond to a wildfire include access to the location and to water, response time from the fire station, availability of personnel and equipment, and weather (e.g., heat, low humidity, high winds, and drought).

Figure RA-8 shows burn probability in Rogue River for community lifelines and historic buildings.

Figure RA-8 Burn Probability



Source: Oregon Partnership for Disaster Resilience. USFS Pacific Northwest Region Wildfire Risk Assessment (PNRA)
Note: To view detail click this link to access Oregon Explorer's CWPP Planning Tool.

Vulnerability Assessment

Due to insufficient data and resources, Rogue River is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Identified community lifelines that are exposed to this hazard are shown in Table RA-3. Note that even if a facility has exposure*, it does not mean there is a high risk (vulnerability).* No development changes affected the jurisdiction's overall vulnerability to this hazard.

Future Projections

According to the Oregon Climate Change Research Institute "Future Climate Projections, Jackson County*,"*[18] wildfire frequency, intensity, and area burned are projected to continue increasing in the Northwest. Wildfire risk, expressed as the average number of days per year on which fire danger is very high, is projected to increase in Jackson County by 13 days (range -6– 29) by the 2050s, relative to the historical baseline (1971–2000), under the higher emissions scenario. Similarly, the average number of days per year on which vapor pressure deficit is extreme is projected to increase by 29 days (range 12–42) by the 2050s. Communities at risk to wildfire include those within the urban wildfire interface or along river or creek corridors, like Bear Creek, where fire can travel quickly. Communities will need to address growing wildfire risks if populations are not restricted from expanding further into higher risk areas.

Please review Volume I, Section 2 for additional information on this hazard.

[18] Oregon Climate Change Research Institute, *Future Climate Projections, Jackson County, Oregon*. February 2023.

Attachment A: Public Involvement Summary

Members of the steering committee provided edits and updates to the NHMP prior to the public review period as reflected in the final document. In addition, a survey was distributed that included responses from residents of Rogue River (Volume III, Appendix F).

To provide the public information regarding the draft NHMP addendum, and provide an opportunity for comment, an announcement (see below) was provided on the City's website from August 29, 2023 and continued into the FEMA review process. The press release was sent to 14 media contacts on August 29th and a newspaper article ran in the August 30th. The plan was also posted and announced on the County's website. There was one public comment that has been integrated int this update where applicable. Additional opportunities for stakeholders and the public to be involved in the planning process are addressed in Volume II, Appendix B.

A diverse array of agencies and organizations were provided an opportunity to provide input to inform the plan's content through a variety of mechanisms including the opportunity for comment on the draft plan. The agencies and organizations represent local and regional agencies involved in hazard mitigation activities, those that have the authority to regulate development, neighboring communities, representatives of businesses, academia, and other private organizations, and representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations. For more information on the engagement strategy see Volume II, Appendix B.

Website Posting



Photography by Randy Johnson

City Hall is open to meet your needs! If it's after hours, or you do not need to speak with someone, drop any payments or paperwork in the lockbox by the front door. This is a secure spot and checked several times daily.

NEWS AND UPDATES

The City of Rogue River seeks additional public input on update to Natural Hazard Mitigation Plan.

(Rogue River, OR) – The City of Rogue River is in the process of updating the existing Natural Hazard Mitigation Plan (NHMP). This work is being performed in cooperation with the University of Oregon's Institute for Policy Research and Engagement - Oregon Partnership for Disaster Resilience and the Oregon Department of Emergency Management utilizing funds obtained from the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program. With re-adoption of the plan, Rogue River will regain its eligibility to apply for federal funding towards natural hazard mitigation projects. This local planning process includes a wide range of representatives from city and county government, emergency management personnel, and outreach to members of the public in the form of an electronic survey.

A natural hazard mitigation plan provides communities with a set of goals, action items, and resources designed to reduce risk from future natural disaster events. Engaging in mitigation activities provides jurisdictions with a number of benefits, including reduced loss of life, property, essential services, critical facilities, and economic hardship; reduced short-term and long-term recovery and reconstruction costs; increased cooperation and communication within the community through the planning process; and increased potential for state and federal funding for recovery and reconstruction projects.

If you have any questions regarding the Rogue River NHMP addendum or the update process in general, please contact: Ryan Nolan, City Administrator at (541) 582-4401.

» Draft Rogue River Addendum to the Natural Hazard Mitigation Plan

City Looks For Input On Natural Hazard Plan

The City of Rogue River is hoping to be able to apply for federal funding projects in dealing and mitigating natural hazards through updating its Natural Hazard Mitigation Plan beginning this week.

The city announced that it is working with the Oregon Department of Emergency Management and the Oregon Partnership for Disaster Resilience, through the University of Oregon's Institute for Policy Research and Engagement to update the plan.

A natural hazard mitigation plan provides communities with goals and resources to help reduce risk from future natural disaster events.

The local planning process includes help from a wide range of representatives from city and county government, emergency management personnel, as well as an outreach effort to the public in the form of an electronic survey.

An electronic version of the updated draft Rogue River Natural Hazard Mitigation Plan (NHMP) is available for a formal public comment period that began on Tues., Aug. 29. The draft is available on the city's Website, www.cityofrogueriver.org.

Rogue River Steering Committee

Steering committee members possessed familiarity with the community of Rogue River and how it is affected by natural hazard events. The steering committee guided the update process through several steps including goal confirmation and prioritization, action item review and development, and information sharing, to update the NHMP and to make the NHMP as comprehensive as possible. The steering committee met formally on the following date:

Meeting #1: Rogue River steering committee, February 17, 2023 (via Zoom)
During this meeting, the steering committee reviewed the previous NHMP, and were provided updates on hazard mitigation planning, the NHMP update process, and project timeline. The steering committee:

- Updated recent history of hazard events in the city.
- Reviewed and confirmed the NHMP's mission and goals.
- Discussed the NHMP public outreach strategy.
- Discussed development changes and community lifelines.
- Reviewed and provided feedback on the draft risk assessment update including community vulnerabilities and hazard information.
- Reviewed and updated their existing mitigation strategy (actions).
- Reviewed and updated their implementation and maintenance program.

Meeting Attendees:

- Convener, Ryan Nolan, Rogue River
- Mike Hammond, RRFD

Attachment B: Action Item Changes

Table RA-6 is an accounting of the status (complete or not complete) and major changes to actions since the previous NHMP. All actions were renumbered in this update to be consistent with other jurisdictions that are participating in the multi-jurisdictional NHMP. Actions identified as still relevant are included in the updated action plan (Table RA-1).

Previous NHMP Actions that are Complete:

Multi-Hazard #1, "Wire schools to use city's portable generators." Complete.

Earthquake #2, "*Promote earthquake insurance*." Complete. This activity is part of normal operations.

Flood #1, "*Mitigate streambank erosion near Wards Creek that is impacting adjacent property*." Complete.

Flood #3, "*Continue participation in the NFIP's Community Rating System (CRS).* Complete. City is CRS 8. Part of normal operations.

Flood #6, *"Protect city facilities in flood prone areas."* Complete. No City facilities in flood prone areas.

Flood #7, *"Implement flood control measures by improving storm drainage and educating the public."* Complete. Part of normal operations.

Flood #8, *"Update the city's stormwater master plan."* Complete. Implemented through 17.90.

Severe Weather #1, *"Encourage new developments to include underground power lines."* Complete. Part of normal operations.

Wildfire #3, *"Continue to promote wildfire education and awareness and the Firewise program."* Complete.

Previous NHMP Actions that are Not Complete and No Longer Relevant:

Earthquake #3, "*Promote and coordinate Earthquake Hazard Risk Map for Jackson County and cities*." Not Complete, No Longer Relevant.

Flood #4, *"Promote and protect the use of naturally flood prone open space or wetlands as flood storage areas."* Not Complete, No Longer Relevant.

Flood #5, *"Preserve water quantity and quality by using stormwater best management practices (Low Impact Development/ Green Infrastructure)."* Not Complete, No Longer Relevant.

Severe Weather #2, *"Education and outreach Disaster Resilient Economy."* Not Complete, No Longer Relevant.

Table RA-6 Status of All Hazard Mitigation Actions in the Previous Plan

2018 Action Item	2024 Action Item	Status	Still Relevant? (Yes/No)
Multi-Hazard Mitigation Items			
MH #1	-	Complete	No
MH #2	1.1	Not Complete	Yes
MH #3	1.2	Not Complete	Yes
MH #4	1.3	Not Complete	Yes
MH #5	1.4	Not Complete	Yes
-	1.5	New	-
-	1.6	New	-
Air Quality Mitigation Items			
-	2.0	New	-
Drought Mitigation Items			
DR #1	3.1	Not Complete	Yes
Earthquake Mitigation Items			
EQ #1	4.1	Not Complete	Yes
EQ #2	-	Complete	No
EQ #3	-	Not Complete	No
Emerging Infectious Disease Mitigation Items			
	5.0	New	-
Flood Mitigation Items			
FL #1	-	Complete	No
FL #2	6.1	Not Complete	Yes
FL #3	-	Complete	No
FL #4	-	Not Complete	No
FL #5	-	Not Complete	No
FL #6	-	Complete	No
FL #7	-	Complete	No
FL #8	-	Complete	No
Landslide Mitigation Items			
-	7.1	New	-
Severe Weather Mitigation Items			
SW #1	-	Complete	No
SW #2	-	Not Complete	No
-	8.1	New	-

2018 Action Item	2024 Action Item	Status	Still Relevant? (Yes/No)
Volcanic Event Mitigation Items			
	9.0	New	-
Wildfire Mitigation Items			
WF #1	10.1	Not Complete	Yes
WF #2	10.2	Not Complete	Yes
WF #3	-	Complete	No
-	10.3	New	-
-	10.4	New	-