DRAFT

LEWIS COUNTY HAZARD MITIGATION PLAN

VOLUME 2: PLANNING PARTNER ANNEXES

March 2024

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APPENDIX A – PLANNING PARTNER EXPECTATIONS
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1.0 INTRODUCTION

1.1 Background

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):
"Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan." (Section 201.6(a)(4))

For the Lewis County Hazard Mitigation Plan Update, a planning partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act for as many eligible local governments as possible. The Disaster Mitigation Act defines a local government as follows:
"Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity."

Two types of planning partners participated in this process for the Lewis County Hazard Mitigation Plan Update, with distinct needs and capabilities:

- Incorporated municipalities: eight cities and Lewis County
- Special purpose districts: sixteen districts throughout the County
- Other planning partners: one non-profit hospital

Each participating planning partner prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

1.2 The Planning Partnership

1.2.1 Initial Solicitation and Letters of Intent

The planning team solicited the participation of all eligible municipalities and special purpose districts at the outset of this project. A kickoff meeting was held on April 2, 2022 to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments in the planning area were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Review the past Grant County Hazard Mitigation Plan and planning partnership
- Outline the work plan for this hazard mitigation plan.
- Describe the benefits of multi-jurisdictional planning.
- Outline planning partner expectations.
- Solicit planning partners.
- Solicit volunteers/recommendations for the steering committee.

Local governments wishing to join the planning effort were asked to provide the planning team with a "letter of intent to participate" that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, the planning team received formal commitment from 14 planning partners in addition to the County.

A map showing the location of participating special purpose districts is provided at the end of this introduction. Maps included in the individual annexes of participating cities show risk assessment results for each of those entities. Countywide risk assessment maps for the entire planning area defined for this plan are provided in the risk assessment chapters of Volume 1 of the hazard mitigation plan.

1.2.2 Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were provided and discussed at the kickoff meeting (see Appendix A for details):

- Complete a "letter of intent to participate."
- Designate a lead point of contact for this effort.
- Support and participate in the selection and function of the Steering Committee.
- Provide support required to implement the public involvement strategy.
- Participate in the process through opportunities such as:
    - Steering Committee meetings
    - Public meetings or open houses
    - Workshops and planning partner specific training sessions
    - Public review and comment periods prior to adoption.
- Attend the mandatory jurisdictional annex workshop.
- Complete the jurisdictional annex.
- Perform a "consistency review" of all technical studies, plans and ordinances specific to hazards.
- Review the risk assessment and identify hazards and vulnerabilities specific to the jurisdiction.
- Review and determine if the mitigation recommendations chosen in Volume 1 will meet the needs of the jurisdiction.
- Create an action plan that identifies each project, who will oversee the task, how it will be financed, and when it is estimated to occur.
- Formally adopt the hazard mitigation plan.

By adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

1.2.3 Linkage Procedures

Eligible local jurisdictions that did not participate in development of this multi-jurisdictional plan may comply with Disaster Mitigation Act requirements by linking to this plan following procedures outlined in Appendix B.

1.3 Annex Preparation Process

1.3.1 Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Separate templates were created for the two types of jurisdictions participating in this plan. The templates were created so that all criteria of Section 201.6 of 44 CFR would be, based on the partners' capabilities and mode of operation. Separate templates were available for partners updating a previous hazard mitigation plan and those developing a first-time hazard mitigation plan. The templates were set up to lead all partner through steps to generate Disaster Mitigation Act-required elements specific to their jurisdictions. The templates and their instructions are included in Appendix C of this volume.

1.3.2 Toolkit

Each planning partner was provided with a too kit to assist in completing the annex template and developing an action plan. The tool kits contained the following:

- The 2016 Lewis County Hazard Mitigation Plan
- A catalog of mitigation best practices and adaptive capacity
- The guiding principle, goals and objectives developed for the update to the plan
- Information on the FEMA Hazard Mitigation Assistance grant program
- Information on past hazard events that have impacted the planning area
- County-wide and jurisdiction-specific maps for hazards of concern
- The risk assessment results developed for this plan
- Information on climate change and expected impacts in the planning area
- Jurisdiction-specific annex templates, with instructions for completing them
- FEMA guidance on plan integration
- The results of a public survey conducted as part of the public involvement strategy
- A copy of the presentation that was given at the workshop sessions.

1.3.3 Workshop

All partners were required to participate in a technical assistance workshop, where key elements of the template were discussed, and the templates were subsequently completed by a designated point of contact for each partner and a member of the planning team. The workshop, held during the July 31, 2023 steering committee meeting and attended by at least one representative from each planning partner, addressed the following topics:

- Overview of Phase 3 of the jurisdictional annex process
- The templates and the tool kit
- Natural events history
- Jurisdiction-specific issues
- Risk ranking
- Status of prior actions
- Developing your action plan

- Cost/benefit review
- Prioritization protocol
- Next steps

1.4 Mitigation Action Plan Development

1.4.1 Risk Ranking

In the risk-ranking exercise, each planning partner was asked to review the ranked risk specifically for its jurisdiction, based on the impact on its population and/or facilities. Municipalities based this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts based this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities' functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. The objectives of this exercise were to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" and "medium" for each jurisdiction as a result of this exercise were considered to be priorities for identifying mitigation actions, although jurisdictions also identified actions to mitigate "low" ranked hazards, as appropriate.

1.4.2 Information Review to Develop Action Plan

The toolkits were used during the workshops and in follow-up work conducted by the planning partners. A large portion of the workshop focused on how the tool kit should be used to develop the mitigation action plan. Planning partners were specifically asked to review the following to assist in the identification of actions:

- **The Jurisdiction's Capability Assessment—**Reviewed to identify capabilities that the jurisdiction does not currently have but should consider pursuing or capabilities that should be revisited and updated to include best available information; also reviewed to determine how existing capabilities can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- **The Jurisdiction's National Flood Insurance Program Compliance Table**—Reviewed to identify opportunities to increase floodplain management capabilities.
- **The Jurisdiction's Review of Its Adaptive Capacity for Climate Change**—Reviewed to identify ways to leverage or continue to improve existing capacities and to improve understanding of other capacities.
- **The Jurisdiction's Identified Opportunities for Future Integration**—Reviewed to identify specific integration actions to be included in the mitigation strategy.
- **Jurisdiction-Specific Vulnerabilities—**Reviewed to identify actions that will help reduce known vulnerabilities.
- **The Mitigation Best Practices Catalog**—Reviewed to identify actions that the jurisdiction should consider including in its action plan.
- **Public Input**—Reviewed to identify potential actions and community priorities.

1.4.3 Prioritization

44 CFR requires actions identified in the action plan to be prioritized (Sections 201.6(c)(3)(iii)). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44 CFR. All identified actions were prioritized in two categories—implementation and grant pursuit—as defined by the following criteria:

Implementation priority:

- **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
- **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years) once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
- **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

Grant pursuit priority:

- **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

These priority definitions are dynamic and can change from one category to another based on changes to a parameter such as availability of funding. For example, a project might be assigned a medium priority because of the uncertainty of a funding source but be changed to high priority once a funding source has been identified. The grant pursuit priority is a newly added prioritization schedule. The prioritization schedule for this plan will be reviewed and updated as needed annually through the plan maintenance strategy.

1.4.4 Benefit/Cost Review

44 CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under the Hazard Mitigation Assistance grant program. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to benefits and costs as follows:

Benefit ratings:

- **High**—The action will have an immediate impact on the reduction of risk exposure to life and property.
- **Medium**—The action will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
- **Low**—Long-term benefits of the action are difficult to quantify in the short-term.

Cost ratings:

- **High**—Existing funding levels are not adequate to cover the costs of the proposed action; implementation would require an increase in revenue through an alternative source (for example, bonds, grants, and fee increases).
- **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- **Low**—The action could be funded under the existing budget. The action is part of or can be part of an existing, ongoing program.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.
For many of the strategies identified in this action plan, funding might be sought under FEMA's Hazard Mitigation Assistance program. This program requires detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Partners reserve the right to define "benefits" according to parameters that meet their needs and the goals and objectives of this plan.

1.4.5 Analysis of Mitigation Actions

All planning partners reviewed their recommended actions to classify each action based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future-conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

These categories include categories identified in the Community Rating System (CRS) 2017 *CRS Coordinators Manual* (OMB No. 1660-0022, Figure 510-4). The CRS categories expand on the four categories in FEMA's 2013 *Local Mitigation Handbook*. They provide a more comprehensive range of options, thus increasing integration opportunities.

1.5 Compatibility with Previously Approved Plan

There were eight municipal planning partners and twelve special-purpose-district partners who participated in this plan that were previously covered under the 2016 Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan Update, which has expired. Table lists all the partners and the role this multi-jurisdictional plan will play in achieving compliance.

1.6 Final Coverage Under the Plan

Only half of the planning partners that submitted letters of intent to participate fully met the participation requirements for this update. Table 1-1 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

Table 1-1. Participating Jurisdictions.

Jurisdiction	Covered by 2016 Plan?	Letter of Intent Date	Attended Workshop?	Completed Template?	Covered by this Hazard Mitigation Plan?
Lewis County	Yes	9/30/2021	Yes	Yes	Yes
City of Centralia	Yes	3/22/2022	Yes	Yes	Yes
City of Chehalis	Yes	4/11/2022	Yes	Yes	Yes
Morton	Yes		Yes	Yes	Yes
Mossyrock	Yes		Yes	Yes	Yes
Napavine	Yes		Yes	Yes	Yes
Vader	Yes	3/22/2022	Yes	Yes	Yes
Winlock	Yes		Yes	Yes	Yes
Cemetery District 4	Yes	4/21/2021	Yes	Yes	Yes
Lewis County Fire District #1	Yes	1/10/2023	Yes	Yes	Yes
Lewis County Fire District #2	Yes	3/10/2022	Yes	Yes	Yes

Jurisdiction	Covered by 2016 Plan?	Letter of Intent Date	Attended Workshop?	Completed Template?	Covered by this Hazard Mitigation Plan?
Lewis County Fire District #3	Yes	3/8/2022	Yes	Yes	Yes
Lewis County Fire District #4	No	3/17/2022	Yes	Yes	Yes
Lewis County Fire District #6	No		Yes	Yes	Yes
Lewis County Fire District #8	Yes	3/16/2022	Yes	Yes	Yes
Lewis County Fire District #10	Yes	3/15/2022	Yes	Yes	Yes
Lewis County Fire District #14	Yes	3/3/2022	Yes	Yes	Yes
Lewis County Fire District #15	Yes	3/21/2022	Yes	Yes	Yes
Lewis County Fire District #20	Yes	3/21/2022	Yes	Yes	Yes
Lewis County Water District #2	No	3/2/2022	Yes	Yes	Yes
Lewis County Public Utility District	Yes	3/10/2022	Yes	Yes	Yes
Port of Chehalis	Yes	3/3/2022	Yes	Yes	Yes
Providence Hospital	Yes	3/1/2022	Yes	Yes	Yes
Thurston Public Utility District	No		Yes	Yes	Yes
Timberland Regional Library	No	3/1/2022	Yes	Yes	Yes

2.0 LEWIS COUNTY

2.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 2-1.

Table 2-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Ross McDowell	Emergency Management Deputy Director
Erika Katt	Emergency Management Planner
Josh Metcalf	Public Works Director
Lee Napier	Community Development Director
Mindy Brooks	Community Development Senior Long Range Planner

2.2 Jurisdiction Profile

2.2.1 Location and Features

Lewis County is located in the southwest part of Washington State. The county touches eight other Washington counties: Grays Harbor, Thurston, and Pierce Counties to the north; Yakima County to the east; Skamania, Cowlitz, and Wahkiakum Counties to the south; and Pacific County to the west. The boundaries of the county are purely political creations except for a portion of the northern boundary that briefly parallels the Nisqually River and the eastern boundary which tracks along the crest of the Cascade Mountains.

The county covers 2,452 square miles and measures about 90 miles (east to west) by 25 miles (north to south). Topography of the area varies widely, from the broad, relatively flat and low-lying western section of the county to the Cascade Mountains to the east. Roughly three-fourths of the county is rugged, mountainous and forested. The remainder is characterized by low rolling hills interspersed with rivers and tributaries including the Cowlitz and Chehalis river systems. The major population centers of Centralia, Chehalis, and Napavine, are located on the flood plains of the Chehalis River and its tributaries, including the Skookumchuck and Newaukum rivers.

More than three-quarters of the land in Lewis County is designated for federal, state, and private resource uses. Of the land area, 72 percent is devoted to forest resource uses and 6 percent is devoted to agricultural land. Approximately one-third of Lewis County is designated as national forest. In East Lewis County, the land include portions of the Mount Rainier National Park, Tatoosh Wilderness, Goat

Rocks Wilderness and William O Douglas Wilderness areas. In the south, a portion of the Mount St Helens National Monument is also in Lewis County.

Within the county, only two percent (2%) of the land lies within urban areas, with one percent (1%) located in cities and one percent (1%) located in unincorporated Urban Growth Areas. Cities in Lewis County include Centralia, Chehalis, Morton, Mossyrock, Napavine, Pe Ell, Toledo, Vader and Winlock. Other communities in Lewis County that are not incorporated cities include: Adna, Ajune, Alpha, Boistfort, Bunker, Carlson, Carriage Hill, Ceres, Cinebar, Claquato, Curtis, Doty, Dryad, Ethel, Evaline, Forest, Galvin, Glenoma, Guerrier, Harmony, Kalber, Klaber, Knab, Kosmos, Lacamas, Lindberg, Littell, Marys Corner, Mineral, Newaukum, Onalaska, Packwood, Randle, Saint Urbans, Salkum, Silver Creek, Waunch Prairie, and Wildwood.

2.2.2 History

The first economic activity in what is now Lewis County was trade. The Cowlitz and Chehalis Indians had developed an extensive trading system between the many subtribes that they consisted of, and with other peoples. Both tribes were river-dependent. They relied upon the rivers for the mainstay of their diet, salmon. Eastern Lewis County, in the early 1800's was home to a band of Táytnapam and the village near where is now called Packwood was the *Chawachas*. Táytnapam descendants are today members of both the Cowlitz Indian Tribe and the Confederated Tribes and Bands of the Yakama Nation.

Although the number of Native Americans in Lewis County is hard to determine, one report indicated that a gathering of the Upper Chehalis Tribe at Ford's Prairie in 1855 was 5,000 people. Malaria in the 1830s, measles in 1840's and smallpox in 1853 reduced the Native America population. Additional decreases in the population were likely because of outmigration due to dispossession of lands by settlers, racism, economic incentives to work in other places and the effects of the Dawes Act. By 1864, the majority of the Native American population was moved to the Chehalis reservation in adjacent Grays Harbor County.

The first European settlers in Lewis County were fur trappers. With outposts at Vancouver and Nisqually, fur trappers scoured much of Lewis County in the early-1800's searching for salable pelts, and were firmly entrenched when Americans stated arriving in the 1840's to farm and settle the area. One of the first recorded white settlers in the county was Simon Plomondon in 1820.

Fur trade began in 1819, when trappers and traders employed by the Montreal-based North West company arrived in the Upper Cowlitz area. Simon Plamondon, a Québéqois employee of the North West Company, traveled into the "big bottom country" of the upper Cowlitz in 1820. The Hudson's Bay Company bought out the North West Company in 1821 and the Cowlitz Farm, in the vicinity of Toledo, was established in 1838.

In 1845 the Oregon territorial government created Lewis County, naming it after Meriwether Lewis, an explorer from the Lewis and Clark Expedition. What they created resembles the present-day county only in name: the original borders extended from the Columbia River to the southern boundary of the Russian Alaska; from the Pacific Ocean to the Cascades. After a border dispute with the British, the borders were redrawn in 1851, and again in 1861, to those in effect today. Meanwhile, the Washington Territory was established and Lewis County became a part of Washington rather than the Oregon Territory.

Among the earliest settlers were Schuyler and Eliza Saunders (1851). They founded the town of Saundersville. Eliza Saunders later platted the land that became the city of Chehalis. Another early settler was George Washington, who platted the land that became Centerville, later renamed Centralia. These early settlers were predominantly fishermen and subsistence farmers. Over time, logging and agriculture became the dominate industries in Lewis County. Mining also assumed some importance with the discovery of fairly high-grade coal deposits.

The Cowlitz River valley from Packwood to Randle, was known by European settlers as “the Big Bottom”, shortened from Bill Bullrush Bottom in reference to the bulrushes that grew along the river. In 1858-59, James Longmire and William Packwood lead an expedition to find a low pass to connect the Puget Sound with the Oregon Trail. Although a pass was not established, significant coal beds were found south and east of the Tatoosh Mountain range that peaked further exploration. William Packwood filed a coal mining claim 1861, returning occasionally until the early 1890’s.

Until the railroad arrived in the Twin Cities (Centralia and Chehalis) in 1872, the primary means of transportation was by riverboat. The completion of the railroad spurred immigration and opened the markets of the East to the logging industry of Lewis County. In 1893, the first money was appropriated for road building to Randle. Two years later, the road was continued to Sulfur Springs at the "far end" of Lewis (near what is now called Packwood). The road to Packwood was State Route 410 and was added to the state highway system in 1926. In 1931, the road was added to the Washington State highway system, although it did not cross the Cascade Mountains until 1951 with the opening of White Pass.

From the late 1800’s until World War II, Lewis County followed a boom-bust cycle typical of an economy dependent on resource based, extractive industries. World War II revived the timber and agricultural industries.

Presently, Lewis County’s economy can best be viewed as one in transition. While much of the county is still dedicated to forestry, the significance of the timber industry has been declining. On the other hand, there have been increases in light industry and retail trade. Tourism has increased significantly since 2020 and is a major economy in eastern and southern Lewis County.

2.2.3 Governing Body Format

The Board of County Commissioners (BOCC) is the county’s legislative and budget authority.
The commissioners serve as the chief administrators for Lewis County operations. The BOCC is made up of three elected officials that serve a district of the county; the districts are drawn based on population.

The BOCC assumes responsibility for the adoption of this plan. Overseen by the Lewis County Manager, Lewis County Community Development in partnership with Lewis County Emergency Management will oversee this plans implementation.

2.3 Current Trends

2.3.1 Population

The U.S. Census provides population data every 10 year; annually the Washington State Office of Financial Management (OFM) provides population estimates. Based on this data, the population of unincorporated Lewis County, not including cities, was:

- 2000 – 40,821
- 2010 – 44,892
- 2020 – 49,461
- 2022 – 50,185

Every five years, Lewis County is required to adopt a 20-year population forecast based on OFM data. Lewis County adopted a 2045 population forecast of 94,542 people total, with 46,466 people living in unincorporated areas. Below is the population allocation for each city and unincorporated Lewis County.

Table 2-2. Lewis County Population.

Lewis County, Washington 2045 Population Allocations (Ordinance 1346)				
City	2022 Total Population	2045 Population Allocation	20-Year Population Increase	20-Year Growth Rate
Centralia	22,376	24,000	1,624	7.26%
Chehalis	9,845	23,000	13,155	133.62%
Morton	1,302	1,351	49	3.75%
Mossyrock	906	1,058	152	16.78%
Napavine	1,969	2,978	1,009	51.24%
Pe Ell	658	680	22	3.30%
Toledo	747	2,537	1,790	239.63%
Vader	899	1,110	211	23.47%
Winlock	2,115	4,756	2,641	124.87%
Total City	**40,817**	**61,469**	**20,652**	**50.60%**
Onalaska UGA	562	700	138	24.56%
Packwood LAMIRDs	910	1,200	290	31.87%
Other Rural	41,157	41,582	425	1.03%
Total Unincorporated	**42,629**	**43,482**	**853**	**2.00%**
Total Lewis County	**83,446**	**104,951**	**21,505**	**25.77%**

2.3.2 Development

More than three-quarters of the land in Lewis County is designated for federal, state, and private resource uses. Of the land area, 72 percent is devoted to forest resource uses and 6 percent is devoted to agricultural land. Approximately one-third of Lewis County is designated as national forest. One percent (1%) of the land is classified as a “limited area of more intense rural development” or LAMIRD,

which includes small towns, commercial crossroads and employment clusters in unincorporated areas. Rural land, not including LAMIRDs and resource lands, encompasses 19 percent of the total land area in Lewis County. Only two percent (2%) of the land lies within urban areas, with one percent (1%) located in cities and one percent (1%) located in unincorporated Urban Growth Areas. Cities in Lewis County include Centralia, Chehalis, Morton, Mossyrock, Napavine, Pe Ell, Toledo, Vader and Winlock.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 2-3 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 2-3. Recent and Expected Future Development Trends.

Criterion		Response					
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*		No					
Is your jurisdiction expected to annex any areas during the performance period of this plan? *If yes, describe land areas and dominant uses.* *If yes, who currently has permitting authority over these areas?*		No					
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas.*		Yes The unincorporated Urban Growth Areas are where the majority of development is anticipated over the next five years.					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?		**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
	Single Family	242	273	292	341	370	319
	Multi-Family	0	0	0	0	0	0
	Other*	542	643	545	471	492	710
	Total	784	916	837	792	862	1,029
	*Includes garages, additions, and other structures.						
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.		**In 2022, Lewis County processed 57 permits in the Shoreline, 51 of which were exempt. Other hazards are not tracked.**					
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.		There is no buildable lands inventory for Lewis County. 72% of Lewis County is designated forest resource area and another 6% is agricultural resource area. 19% is rural with lots sizes typically 5 or more acres or in LAMIRDs. The remaining 3% is cities and Urban Growth Areas.					

2.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 2-4.
- Development and permitting capabilities are presented in Table 2-5.
- An assessment of fiscal capabilities is presented in Table 2-6.
- An assessment of administrative and technical capabilities is presented in Table 2-7.
- An assessment of education and outreach capabilities is presented in Table 2-8.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 2-9.
- Classifications under various community mitigation programs are presented in Table 2-10.
- The community's adaptive capacity for the impacts of climate change is presented in Table 2-11.

Table 2-4. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	Yes	Yes	Yes
Comment: Lewis County Code Title 15, Building and Construction. Lewis County will adopt the 2021 International Building Code in July 2023.				
Zoning Code	Yes	No	Yes	Yes
Comment: Lewis County Code Title 17, Land Use and Development Regulations. The zoning code is amended annually.				
Subdivisions	Yes	No	Yes	Yes
Comment: Lewis County Code Title 17, Subdivisions.				
Stormwater Management	Yes	Yes	Yes	Yes
Comment: New and re-development needs to meet the state Department of Ecology Stormwater Management Manual and Lewis County Code Chapter 15.45, Stormwater Management.				
Post-Disaster Recovery	Yes	Yes	No	Yes
Comment:				
Real Estate Disclosure	No	No	No	No
Comment:				
Growth Management	Yes	No	Yes	Yes
Comment: Growth Management Act compliant since 2010				
Site Plan Review	Yes	No	No	Yes
Comment: Lewis County uses a Master Site Review process				
Environmental Protection	Yes	No	Yes	Yes
Comment: Lewis County Code Chapter 17.38, Critical Areas, and Chapter 17.25, Shoreline Management				
Flood Damage Prevention	Yes	No	Yes	Yes
Comment: Lewis County Code Chapter 17.38, Article VII. Frequently Flood Areas				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Emergency Management	Yes	Yes	Yes	Yes
Comment: Chapter 38.52 RCW: Emergency Management				
Climate Change	Yes	Yes	Yes	Yes
Comment: Lewis County Code Chapter 17.38, Critical Areas, and Chapter 17.25, Shoreline Management				
Other	Yes	Yes	Yes	Yes
Comment: Lewis County Code Title 12, Public Roads and Places- Cities to add for their Phase				
Planning Documents				
Comprehensive Plan	Yes	Yes	Yes	Yes
Comment: Adopted in December 2008, amended in August 2009, June 2018. Last updated in 2021.				
Capital Facilities Plan	Yes	No	Yes	Yes
How often is the plan updated? Annually				
Comment: This plan is part of the Comprehensive Plan. Last updated in 2021.				
Disaster Debris Management Plan	Yes	No	No	No
Comment: Lewis County Public Works Disaster Debris Management Plan- 3rd Revision				
Floodplain or Watershed Plan	Yes	No	No	Yes
Comment: Chehalis River Basin CFHMP- Resolution 21-0005 Adopted November 30, 2021				
Stormwater Plan	Yes	No	Yes	Yes
Comment:				
Water System Plan	Yes	Yes	Yes	Yes
Comment:				
Habitat Conservation Plan	Yes	No	No	Yes
Comment:				
Economic Development Plan	Yes	No	No	Yes
Comment: No current Economic Development Plan				
Shoreline Management Plan	Yes	No	Yes	Yes
Comment: Updated September 21,2021				
Community Wildfire Protection Plan	Yes	Yes	Yes	Yes
Comment: Lewis County Fire Service Resources Mobilization Plan, RCW 43.43.961 WA State Fire Service Resource Mobilization Plan				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	Yes	Yes	No	No
Comment: Adopt HMP as part of Comprehensive Plan				
Comprehensive Emergency Management Plan	Yes	Yes	Yes	Yes
Comment: Adopted in 2016- Revision to be completed by December 2023				
Threat and Hazard Identification and Risk Assessment (THIRA)	Yes	Yes	Yes	Yes
Comment: Submitted 2022				
Post-Disaster Recovery Plan	No	No	No	Yes
Comment: Washington State ESF #14 Long Term Recovery, 2010				
Continuity of Operations Plan	Yes	Yes	Yes	Yes
Comment: Completed in 2020. Revision to be completed by December 2023				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Public Health Plan	Yes	Yes	Yes	Yes
Comment: All-Hazard Emergency Action Plan - Updated December 17,2021				
Other				
Comment:				

Table 2-5. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If no, who does? If yes, which department? Department of Community Development	
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

Table 2-6. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: Water and Sewer	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 2-7. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Community Development and Public Works	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Emergency Management, Community Development and Public Works	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Emergency Management	
Surveyors	Yes
If yes, Department/Position: Community Development and Public Works	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: GIS Division of Public Works	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Emergency Management	
Grant writers	Yes
If yes, Department/Position: All	

Table 2-8. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes
If yes, briefly describe: Hazard Mitigation tab as well as planning	
Do you use social media for hazard mitigation education and outreach?	Yes
If yes, briefly describe: Facebook/Twitter	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
If yes, briefly describe: Emergency Management Council	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
If yes, briefly describe: Partnering relationships to assist with distribution of information.	
Do you have any established warning systems for hazard events?	Yes
If yes, briefly describe: Community Emergency Alert system: Everbridge (LC Alerts) and WEA	

Table 2-9. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (Department/Position)	Community Development, Building Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* Ordinance 1245	2013
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	6/7/2005
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes, what is the effective date?* August 15, 2023	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.* Mapping is currently being updated.	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* Yes *If no, is your jurisdiction interested in joining the CRS program?*	Yes
How many flood insurance policies are in force in your jurisdiction?[a] *What is the premium in force?* $693,336	739
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?* $24,217,924	783
Description of how the County implements the substantial improvement/substantial damage provisions of their floodplain management ordinance *Describe:* After an event, the Floodplain Administrator will assemble a team of inspectors to perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. If the event was flooding, this team would have also conducted a windshield survey during the flood event to document structures affected by flooding. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations. For more information, see Lewis County Code Chapter 15.35	

a. According to FEMA statistics as of January 18, 2024

Table 2-10. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A		N/A
DUNS #	Yes		N/A
Community Rating System	Yes	5	2019
Building Code Effectiveness Grading Schedule	Yes	4 residential/3 commercial	2023
Public Protection	No		
Storm Ready	Yes	N/A	2023
Firewise	Yes	N/A	2022

Table 2-11. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment:	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment:	
Participation in regional groups addressing climate risks	Medium
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Medium
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Medium
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	High
Comment:	

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

2.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

2.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County Comprehensive Plan** – Natural Environment Goals and Policies, under the Land Use Element, address critical areas and shoreline environments
- **Lewis County Shoreline Management Program** – Identifies shoreline environments and regulatory requirements
- **Lewis County Municipal Code** – Lewis County Code Title 17 includes requirements related to protection of critical areas, including frequently flooded areas

2.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Lewis County Comprehensive Plan** – Currently the focus is on critical areas including rivers, streams, wetlands, lakes, flood area, geologic hazards, and aquifer recharge area. The goals and policies could be expanded to include wildfire, earthquake, etc. In addition, during the required Periodic Update of the plan, Lewis County will adopt the Hazard Mitigation Plan and during Periodic Update a climate resiliency element will be added to the plan.
- **Lewis County Municipal Code** – Currently there are regulations that address critical areas and shoreline environments. The code could address urban/wildland interface areas. The codes will be updated to reflected changes adopted during the Periodic Update of the Comprehensive Plan, including those related to the new climate resiliency element.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

2.6 Risk Assessment

2.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-12 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 2-12. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	Not Available
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	Not Available
Flooding and Mudslides	4635	11/13-11/15/2021	Not Available
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	Not Available
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	Not Available
Biological, COVID-19	4481	1/20/2020-9/11/2023	Not Available
Biological, COVID-19	3427	1/20/2020-9/1/2023	Not Available
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	Not Available

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	Not Available
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	Not Available
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	Not Available
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	Not Available
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	Not Available
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	Not Available
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	Not Available
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	Not Available
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	Not Available
Earthquake	1361	2/28-3/16/2001	Not Available
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	Not Available
Severe Storms, Flooding	1100	1/26-2/23/1996	Not Available
Storms, High Winds, Floods	1079	11/7-12/18/1995	Not Available
Severe Storm, High Winds	981	1/20-1/21/1993	Not Available
High Tides, Severe Storm	896	12/20-12/31/1990	Not Available
Flooding, Severe Storm	883	11/9-12/20/1990	Not Available
Flooding, Severe Storm	852	1/6-1/14/1990	Not Available
Severe Storms, Flooding	784	11/22-11/29/1986	Not Available
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Not Available
Severe Storms, Mudslides, Flooding	545	12/10/1977	Not Available
Severe Storms, Flooding	492	12/13/1975	Not Available
Severe Storms, Snowmelt, Flooding	414	1/25/1974	Not Available
Severe Storms, Flooding	322	2/01/1972	Not Available

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	Not Available
Heavy Rains and Flooding	185	12/29/1964	Not Available

2.6.2 Hazard Risk Ranking

Table 2-13 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 2-13. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	34	High
2	Flood	32	High
3	Volcano	22	Medium
4	Dam Failure	20	Medium
5	Severe Weather	18	Medium
6	Wildfire	12	Low
7	Avalanche	12	Low
8	Landslide	12	Low

2.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 54
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 3
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 27

2.7 Status of Previous Plan Actions

Table 2-14 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 2-14. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Incorporate early warning procedures in local ERPs *Comment:* CEMP (ESF #2), EAS Plan, Lewis County Alert	X			
Create prioritized plans for road/street clearance *Comment:* Debris Removal Plan. I-5 Closure Plan. Snow Routes.	X			
Review adequacy of existing mutual aid agreements *Comment:* Ensuring the accuracy and validity of MAA/MOU's would be good.			X	LC-7
Define evacuation routes for areas of high volcanic probability *Comment:* This needs to be revisited.				LC-8
Continue to enforce the flood damage prevention code. *Comment:* Yes, we continue to enforce Lewis County Code Chapter 15.35, as well as the Shoreline Management Program, and Critical Areas Ordinance.			X	LC-4
Continue participation and implementation of project recommended by the Chehalis River Basin Flood Authority *Comment:* Continue to be part of this group/projects.			X	LC-6
Evaluate potential benefits of HMGP Home Elevation Program *Comment:*	X			
Include a compensatory storage element (storage in floodplain) and ensure consistency with County floodplain ordinances. *Comment:* Lewis County Code 15.35.190. Include new action to evaluate a no-net-rise general standard	X			
Update road addressing and incorporate into addressing ordinance *Comment:*	X			
Lewis County PUD tree maintenance program trims trees around powerlines. *Comment:* This should be addressed by LC PUD		X		
Retrofit existing overhead lines to underground as practicable and where time/budget allows. *Comment:* This should be addressed by LC PUD or private entities.		X		
Explore the feasibility of creating wildfire zones for incorporation into critical areas ordinance. *Comment:* Partnership with FireWise and Community Development			X	LC-2
Incorporate the channel migration zones in the critical areas ordinance. Do necessary studies for mapping other river basins; utilize public process through Planning Commission to incorporate CMZ into critical areas ordinance. *Comment:*	X			
Review critical areas ordinance to update flood zones, seismic zones, and landslides. *Comment:* Ongoing			X	LC-2
Evaluate feasibility of creating high wind zones for incorporation into critical areas ordinance. *Comment:*			X	LC-3
Ensure wind ratings in building code are adequate and consistent *Comment:*	X			
Explore feasibility of considering volcanic evacuation in determining building occupancy limits. *Comment:* No resources available		X		

Action Item from Previous Plan	Completed	Removed No Longer Feasible	Carried Over to Plan Update Check if Yes	Carried Over to Plan Update Action # in Update
Incorporate early warning procedures in local ERPs	X			
Continue to maintain concurrency with all building, plumbing, electrical and other condes that reduce vulnerability of new structures to natural hazards. *Comment:* Ongoing			X	LC-3
Maintain/ update HMP Mitigation database *Comment:* Ongoing		X		
Coordinate annual participation of Opt-ins in HMP review/update *Comment:* Covered by different action.		X		
Improve NOAA radio coverage for East County *Comment:* Not under LC.		X		
Lobby Federal Government to fully implement EAS technology in consumer electronics. *Comment:*	X			
Educate public on what to do before, after, and during an emergency *Comment:* This is a continued thing that will be done on a regular basis.			X	LC-9
Educate public about need to create buffer zones between home and timber *Comment:* FireWise			X	LC-10
Review existing ESF #36 Draft "Drought" discuss any needed revisions and additions to plan. Finalize plan and train staff appropriately. *Comment:* Not an annual thing.		X		
Update EAP plan for dumping of damaged materials (LC Solid Waste Transfer Station) *Comment:* Debris Disposal Plan	X			
Update Emergency Action Plan and educate staff (LC Juvenile Court) *Comment:* Ongoing			X	LC-11
Update agreements with other agencies to hold prisoners in the event of damage to local facility (LC Juvenile Court) *Comment:*	X			
Monitor flooding and take action to move equipment in event (LC Sheriff Packwood) *Comment:* No longer in flood zone		X		
Create EAP plan for building and train employees on use (LC Public Services) *Comment:* Rewrite		X		
Maintenance staff monitor for any damage to facility (LC Public Services) *Comment:* Rewrite		X		
Create EAP plan for building and train employee of use (LC Courthouse) *Comment:* Rewrite		X		
Maintenance staff monitor for any damage to facility (LC Courthouse) *Comment:* Rewrite		X		

Action Item from Previous Plan	Completed	Removed No Longer Feasible	Carried Over to Plan Update Check if Yes	Carried Over to Plan Update Action # in Update
Incorporate early warning procedures in local ERPs	X			
Develop a plan to keep facility operations- Mt. St. Helens (Ed Carlson Memorial- South Lewis County Airport) *Comment:* Rewrite		X		
Develop a plan to keep facility operations- Mt. Rainer (Packwood Airport) *Comment:* Rewrite		X		
Assess buildings for seismic and ash fall capabilities (Ed Carlson Memorial-South Lewis County Airport) *Comment:* Rewrite		X		
Update Airport Layout Plan (Packwood Airport) *Comment:* Rewrite		X		
Create EAP Plan for building and train employees on use (LC Public Health and Social Services) *Comment:* Rewrite		X		
Maintenance staff monitor for any damage to facility (LC Law and Justice) *Comment:* Rewrite		X		
Create EAP Plan for building and train employees on use (LC Motor Pool) *Comment:* Rewrite		X		
Maintenance staff monitor for any damage to facility (LC Motor Pool) *Comment:* Rewrite		X		
Coordinate warning systems for potential break with other stakeholders (Skookumchuck Dam) *Comment:* This has been practiced and corrections have been suggested to the Skookumchuck Dam facility personal.		X		
Ensure bridges associated to the neighborhood has a high priority for inspection and retrofit. *Comment:* Which neighborhood? What incident? What bridges? Action was unclear.		X		

2.8 Hazard Mitigation Action Plan

Table 2-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 2-16 identifies the priority for each action. Table 2-17 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 2-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LC-1— Adopt the Hazard Mitigation Plan as a part of the Lewis County Comprehensive Plan Periodic Update**.**						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	1	Community Development	Public Works Emergency Management	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LC-2— Update Critical Areas Ordinance to integrate Hazard Mitigation Plan						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	2	Community Development	Public Works Emergency Management	Low	Staff Time, General Funds	Medium-term
Action LC-3— Coordinate updates to land use and building regulations that reduce the impacts of natural hazards and seek a regulatory cohesiveness within the planning area.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	1	Community Development	N/A	Medium	Staff Time, General Funds	Medium-term
Action LC-4— Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Flood					
New and Existing	1, 2	Community Development	Public Works GIS	Medium	Staff Time, General Funds	Short-term
Action LC-5— Maintain accreditation in the Community Rating System (CRS)						
Hazards Mitigated:	Flood					
New and Existing	1, 3	Community Development	Public Works GIS	Low	Staff Time, General Funds	Short-term
Action LC-6— Continue participation in the Chehalis River Basis Flood Authority						
Hazards Mitigated:	Flood					
New and Existing	1, 3, 5	Board of County Commissioners	Community Development	Low	RCO Grant	Long-term
Action LC-7— Review adequacy of existing mutual aid agreements.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	1, 4, 6	Emergency Management	Multiple	Low	Staff Time, General Funds	Short-Term
Action LC-8— Define evacuation routes for areas of high vulnerability.						
Hazards Mitigated:	Dam Failure, Flood, Volcano, Wildfire					
New and Existing	3, 4, 6	Emergency Management	Public Works	Low	Staff Time, General Funds	Medium-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LC-9—Encourage the development and implementation of a county-wide all-hazard public information strategy that meets the needs of all participating partners and reaches the whole community. Leverage public outreach partnering capabilities to inform and educate the public about natural and manmade disaster.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	3, 4	Emergency Management	Public Works	Medium	Staff Time, General Funds	Medium-Term
Action LC-10— Educate public about need to create defensible space between home and timber.						
Hazards Mitigated:	Wildfire, Volcano					
New and Existing	3	Emergency Management	Fire Districts	Low	HMGP, BRIC	Short-Term
Action LC-11— Update Emergency Action Plan and train staff						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	3	Emergency Management	N/A	Low	Staff Time, General Funds	Short-Term
Action LC-12— Sponsor and maintain a natural hazards informational website to include hazard-specific information such as GIS layers.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	3	Emergency Management	Information Technology	Medium	Staff Time, General Funds	Medium-Term
Action LC-13— Support the collection of improved data (hydrologic, geologic, topographic, historical, etc.) to better assess risks and vulnerabilities.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	2, 3, 4, 5, 6	Emergency Management	Community Development, Public Works, Information Technology	High	Staff Time, General Funds	Medium-Term
Action LC-14— Work with state and others to add air quality monitors across Lewis County						
Hazards Mitigated:	Volcano, Wildfire					
New and Existing	3, 4	Emergency Management	SWCAA	High	HMGP, BRIC	Long-Term
Action LC-15— Develop an educational program for owners of hotels, motels, short term rentals, RV Parks and campgrounds to help them inform their clients about hazard emergencies and how to react.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	3, 4	Emergency Management	Community Development	Low	Staff Time, General Funds	Short-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LC-16— Enhance the lahar siren capabilities and placement within Lewis County.						
Hazards Mitigated:	Avalanche, Landslide, Volcano					
New and Existing	4	Emergency Management	WA State Emergency Management	High	Unknown	Long-Term
Action LC-17— Encourage the participation in and development of communication plans throughout the county for better interoperability.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	3, 4	Emergency Management	N/A	High	Staff Time, General Funds	Long-Term
Action LC-18—Brim Road Culvert Replacement MP 1.90 to reduce flood risk and meet WDFW fish passage guidelines						
Hazards Mitigated:	Flood					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-19— Evans Road Culvert Replacement MP 5.30 to reduce flood risk and meet WDFW fish passage guidelines						
Hazards Mitigated:	Flood					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-20— Jones Road Culvert Replacement MP 1.71 to reduce flood risk and meet WDFW fish passage guidelines						
Hazards Mitigated:	Flood					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-21— Shorey Road Bank Stabilization to reduce risk of erosion during Newaukum River flood events						
Hazards Mitigated:	Flood					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Short-Term
Action LC-22— Development of preliminary designs for the modification of one low head dam and removal of a second low head dam associated with the Cowlitz Trout Hatchery; the replacement of the Spencer Rd Bridge with a with a fish passable structure; placement of large woody debris structures; and channel regrade.						
Hazards Mitigated:	Flood					
Existing	5, 6	Public Works	N/A	High	Unknown	Long-Term
Action LC-23— Carr Road slide repair and stabilization. MP 0.20 and MP 0.26						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Short-Term
Action LC-24— Rodgers Road slide repair and stabilization. MP 0.15.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LC-25— Spencer Road slide repair and stabilization. MP 5.25.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-26— Burnett Road slide repair and stabilization. MP 0.47.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-27— Rosebrook Road slide repair and stabilization. MP 0.50.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-28— Meade Hill Road slide repair and stabilization. MP 5.66.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-29— Independence Road slide repair and stabilization. MP 2.95.						
Hazards Mitigated:	Landslide					
Existing	5, 6	Public Works	N/A	Medium	FEMA	Medium-Term
Action LC-30— Maintain a database of flood risks and flood control needs.						
Hazards Mitigated:	Flooding					
News and Existing	1, 3, 4, 5	Emergency Management	Public Works	Low	Staff time, General Fund	Short-Term
Action LC-31— Maintain an inventory of properties that experience repetitive loss due to flooding.						
Hazards Mitigated:	Flooding					
Existing	1, 3, 4, 5	Community Development	Emergency Management, Public Works	High	Unknown	Medium-Term
Action LC-32— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated:	Wildfire					
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 2-16. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	1	Medium	Low	Yes	Yes	Yes	High	Medium

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
2	1	Medium	Low	Yes	Yes	Yes	High	Medium
3	1	Medium	Medium	Yes	Yes	Yes	High	Medium
4	2	Medium	Medium	Yes	Yes	Yes	High	High
5	2	Medium	Low	Yes	Yes	Yes	High	Medium
6	3	Low	Low	Yes	Yes	Yes	High	Medium
7	3	Medium	Low	Yes	Yes	Yes	High	Medium
8	3	High	Low	Yes	Yes	Yes	High	High
9	2	Low	Medium	Yes	Yes	Yes	High	High
10	1	Low	Low	Yes	Yes	Yes	High	Medium
11	1	Low	Low	Yes	Yes	Yes	High	Medium
12	1	Low	Medium	Yes	Yes	Yes	High	Medium
13	5	Low	High	Yes	Yes	No	High	High
14	2	Low	High	Yes	Yes	No	Medium	Medium
15	2	Medium	Low	Yes	Yes	Yes	High	Medium
16	1	Low	High	Yes	Yes	No	Medium	Medium
17	2	Low	High	Yes	Yes	No	Medium	Medium
18	2	High	Medium	Yes	Yes	No	High	High
19	2	High	Medium	Yes	Yes	No	High	High
20	2	High	Medium	Yes	Yes	No	High	High
21	2	High	Medium	Yes	Yes	No	High	High
22	2	High	Medium	Yes	Yes	No	High	High
23	2	High	Medium	Yes	Yes	No	High	High
24	2	High	Medium	Yes	Yes	No	High	High
25	2	High	Medium	Yes	Yes	No	High	High
26	2	High	Medium	Yes	Yes	No	High	High
27	2	High	Medium	Yes	Yes	No	High	High
28	2	High	Medium	Yes	Yes	No	High	High
29	2	High	Medium	Yes	Yes	No	High	High
30	4	Medium	High	Yes	Yes	No	Medium	Medium
31	4	Medium	High	Yes	Yes	No	Medium	Medium
32	See individual actions in Volume 1 Section 14.9							

Table 2-17. Analysis of Mitigation Actions.

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Flood	LC-1,2,3,6,30,31	LC-1,2,3,4,6,10	LC-9,11,12,13,15,17,30,31	LC-1,2,3	LC-7,8,15,17,30,31	LC-6,18,19,20 21,22	LC-1,2,3	LC-9,11,15,30,31
Earthquake	LC-1,2,3	LC-1,2,3,7	LC-9,11,12,13,14,15,17	LC-1,2,3	LC-7,14,15,17		LC-1,2,3	LC-9,11,15
Medium-Risk Hazards								
Dam Failure	LC-1,2,3	LC-1,2,3,7	LC-9,11,12,13 15,17	LC-1,2,3	LC-7,8,15,17		LC-1,2,3	LC-9,11,15
Volcano	LC-1,2,3	LC-1,2,3,7	LC-9,10,11,12,14,13,15,16,17	LC-1,2,3	LC-7,8,14,15,16,17		LC-1,2,3	LC-9,10,11,15
Severe Weather	LC-1,2,3	LC-1 ,2,3,7	LC-9,11,12,13,15,17	LC-1,2,3	LC-7,15,17		LC-1,2,3	LC-9,11,15
Low-Risk Hazards								
Wildfire	LC-1,2,3,10,14	LC-1,2,3,7,10	LC-9,10,11,12,13,14,15,17	LC-1,2,3	LC-7,8,14,15,17		LC-1,2,3	LC-9,10,11,15
Avalanche	LC-1,2,3	LC-1,2,3,7	LC-9,11,12,13,15,16,17	LC-1,2,3	LC-7,15,16,17		LC-1,2,3	LC-9,11,15
Landslide	LC-1,2,3	LC-1,2,3,7	LC-9,11,12,13 15,16,17	LC-1,2,3	LC-7,15,16,17	LC-23,24,25,26,27,28,29	LC-1,2,3	LC-9,11,15

2.9 Public Outreach

Table 2-18 lists public outreach activities for this jurisdiction.

Table 2-18. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
Community Preparedness Presentations	Ongoing	25+ each
Cascadia Rising	June 2022	150
Parades	3 Yearly	1000+ each
SWW Fair	August (Yearly)	1000+

HMP Hazards Outreach	May 2023	100

2.10 Information Sources Used for This Annex

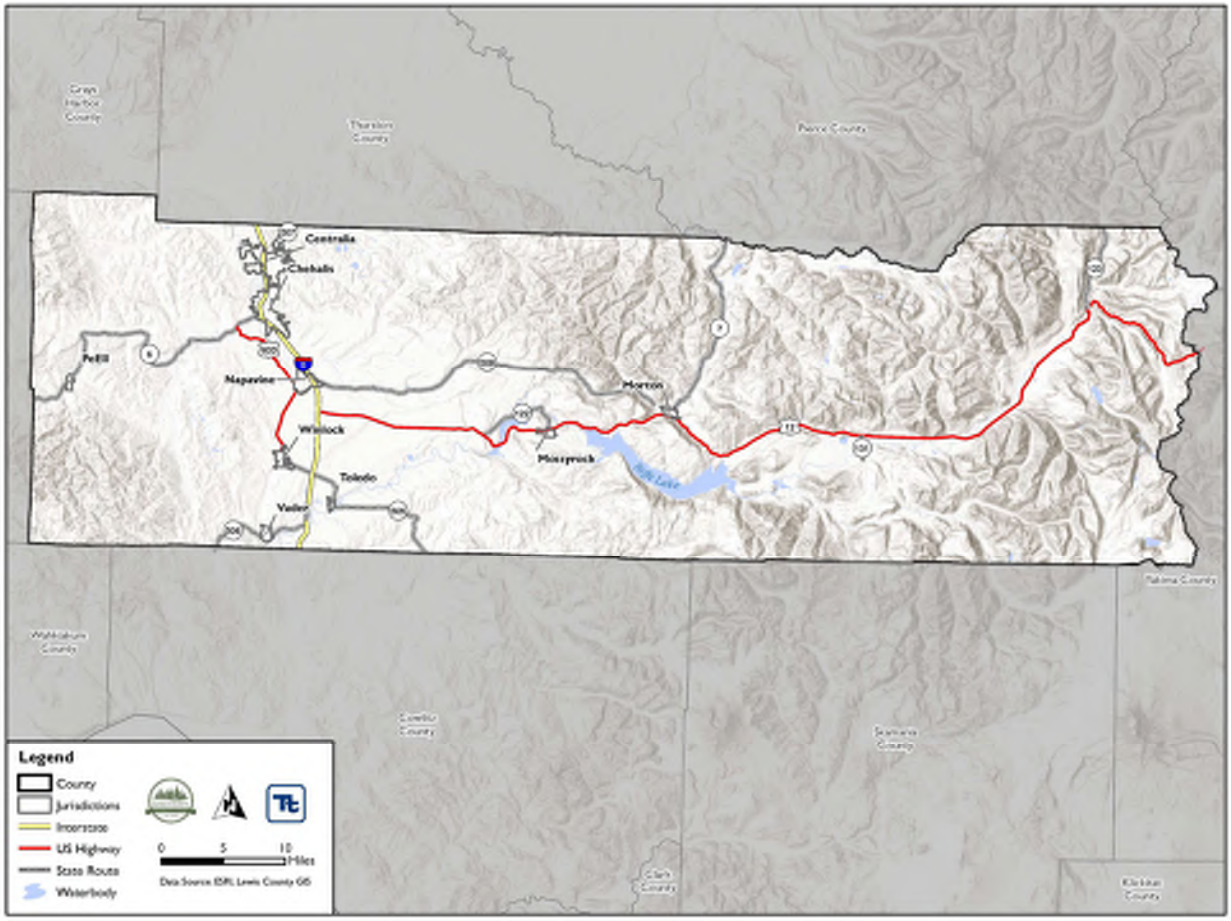
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Lewis County Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Lewis County Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Lewis County Shoreline Management Program –** Review to determine gaps.
- **Lewis County Critical Areas Ordinance –** Review to determine gaps.
- **Voluntary Stewardship Program –** Review to determine gaps.
- **Urban Wildland Interface Plan** – To safeguard life and property from the intrusion of wildland fire
- **Lewis County Comprehensive Emergency Management Plan –** To guide county's actions before, during, and after a disaster.
- **Lewis County Threats and Hazards Identification Risk Assessment –** Helps communities of Lewis County understand the Variety of risks it faces.
- **Chehalis River Basin Comprehensive Flood Hazard Mitigation Plan –** Define flood problems in the basin and propose solutions for those problems.
- **Cowlitz River Flood Zone District Plan –** Provides insight into flood mitigation, response, and recovery.
- **Nisqually River Flood Zone District Plan –** Provides insight into flood mitigation, response, and recovery.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- **Cowlitz Falls Hydroelectric Project –** Provides information on critical dam infrastructure in an emergency.
- **Tacoma Power Hydroelectric Projects (Mayfield Dam and Mossyrock Dam)** – Provides information on critical dam infrastructure in an emergency.
- **Energy Northwest – Packwood Lake Hydroelectric Project –** Provides information on critical dam infrastructure in an emergency.
- **TransAlta – Schookumchuck Dam Infrastructure Plan –** Provides information on critical dam infrastructure in an emergency.

2.11 Hazard Maps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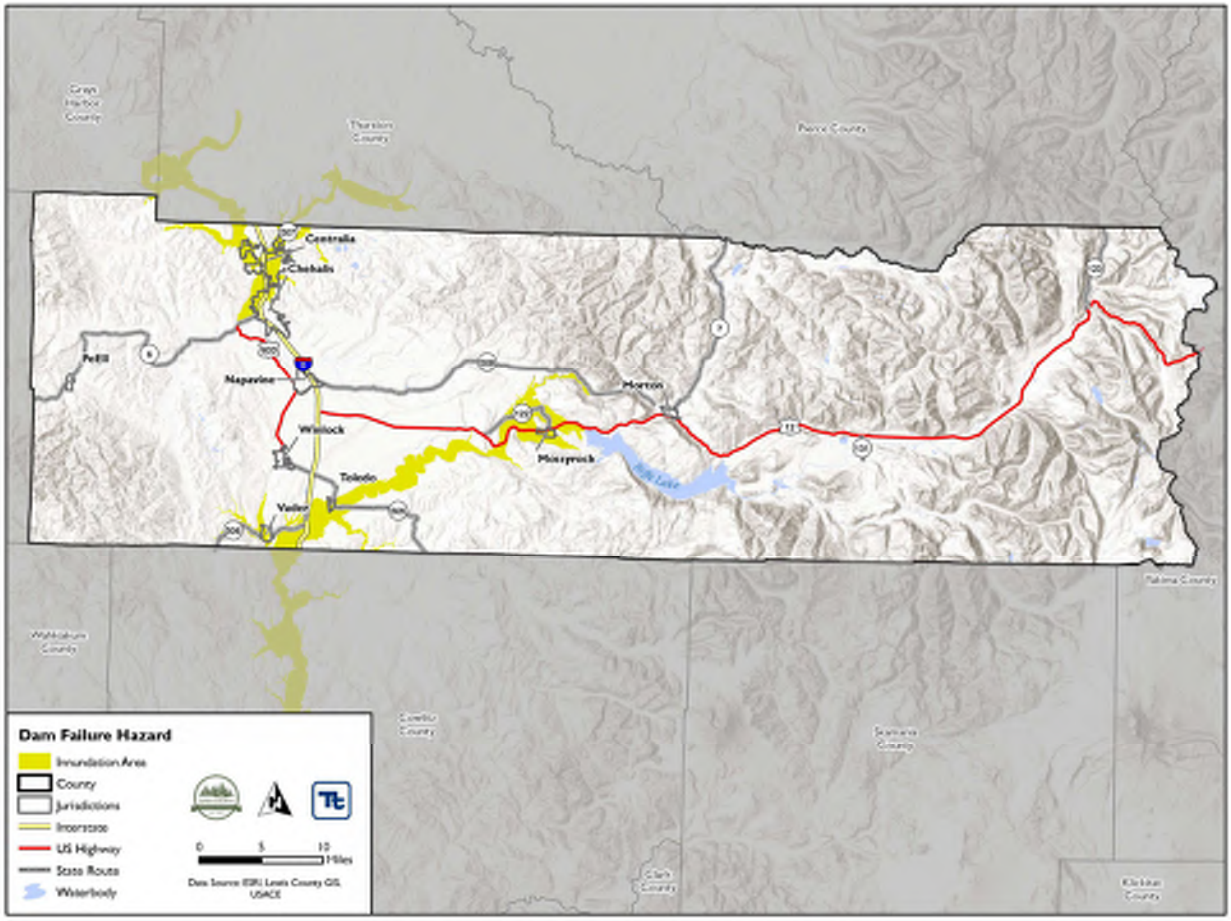
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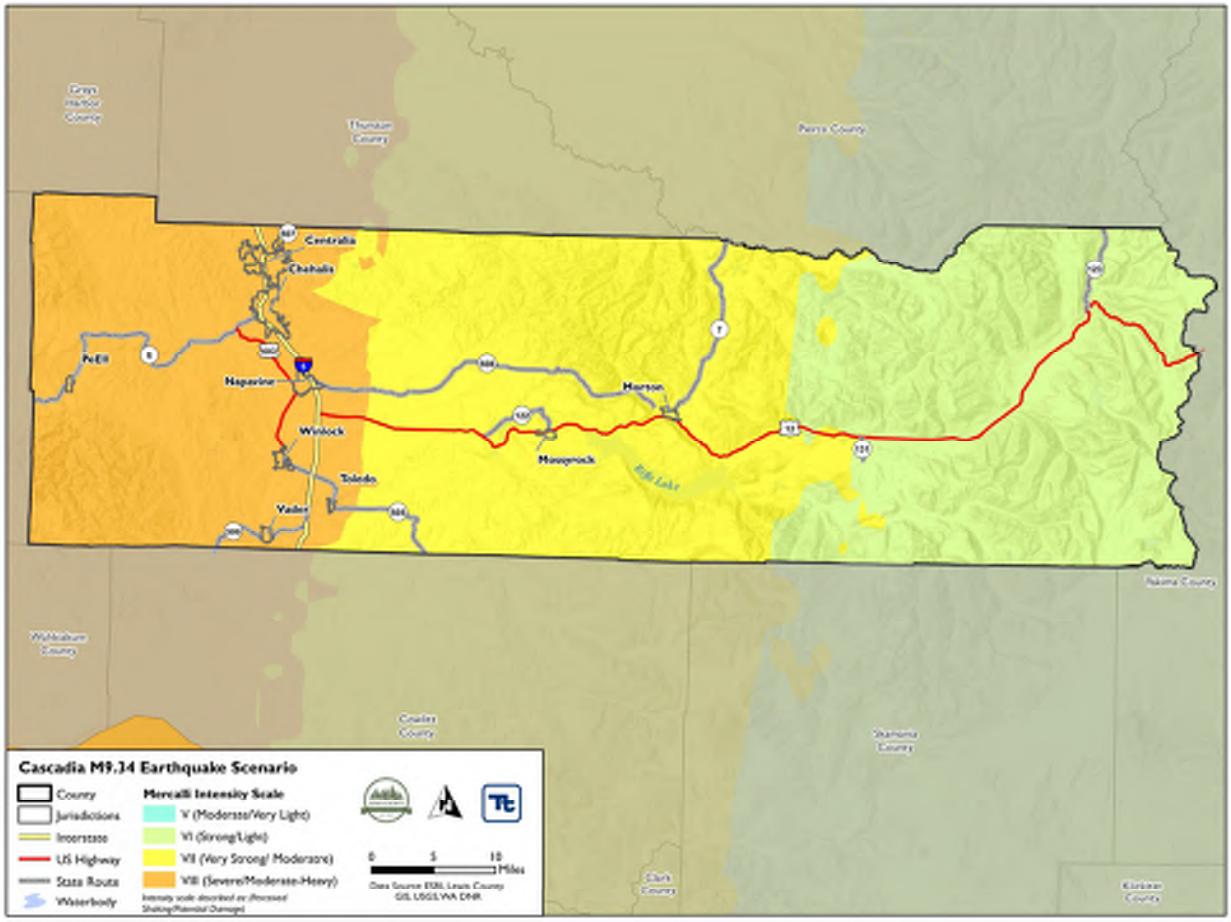
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Riffe Lake
Cascadia M9.14 Earthquake Scenario
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Jurisdictions
Interstate
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State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
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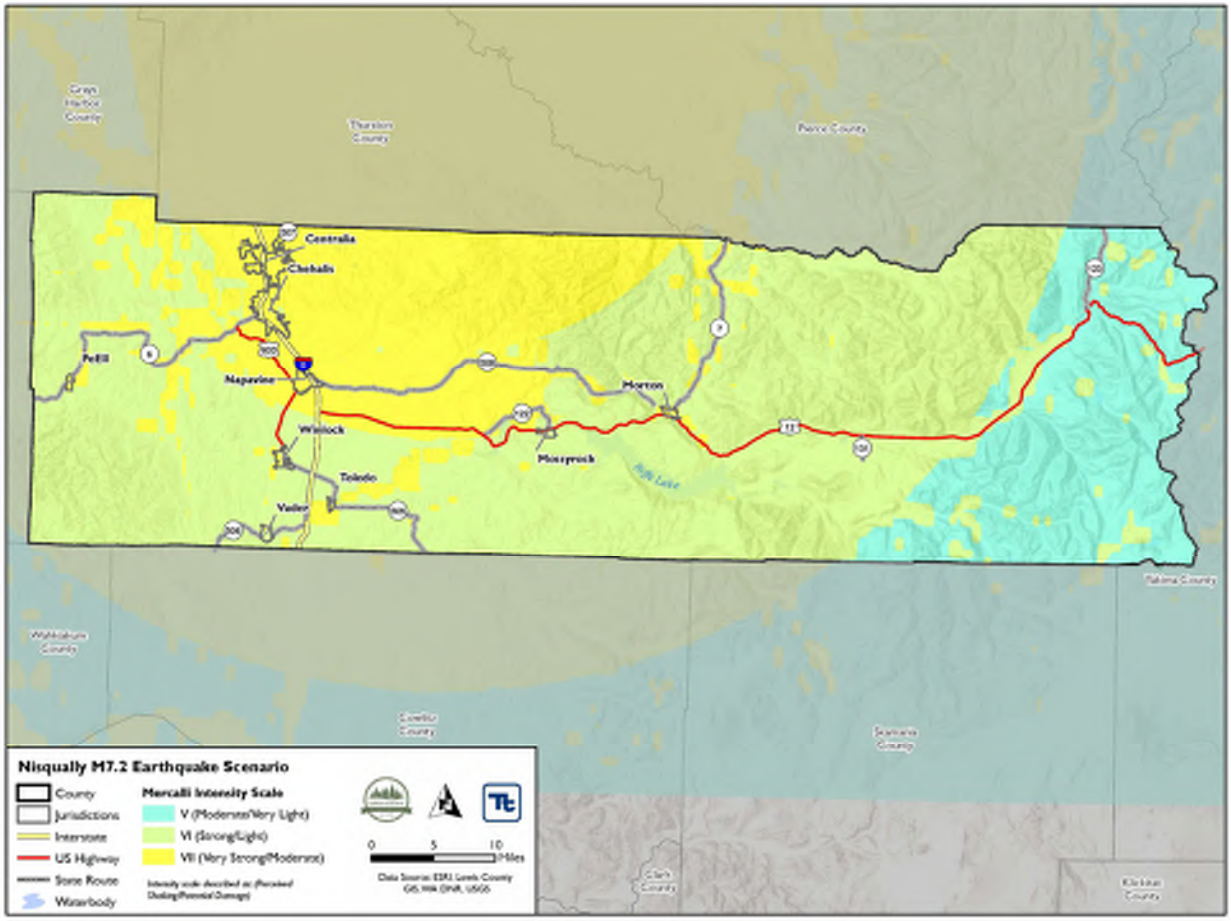
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Riffe Lake
Nisqually M7.2 Earthquake Scenario
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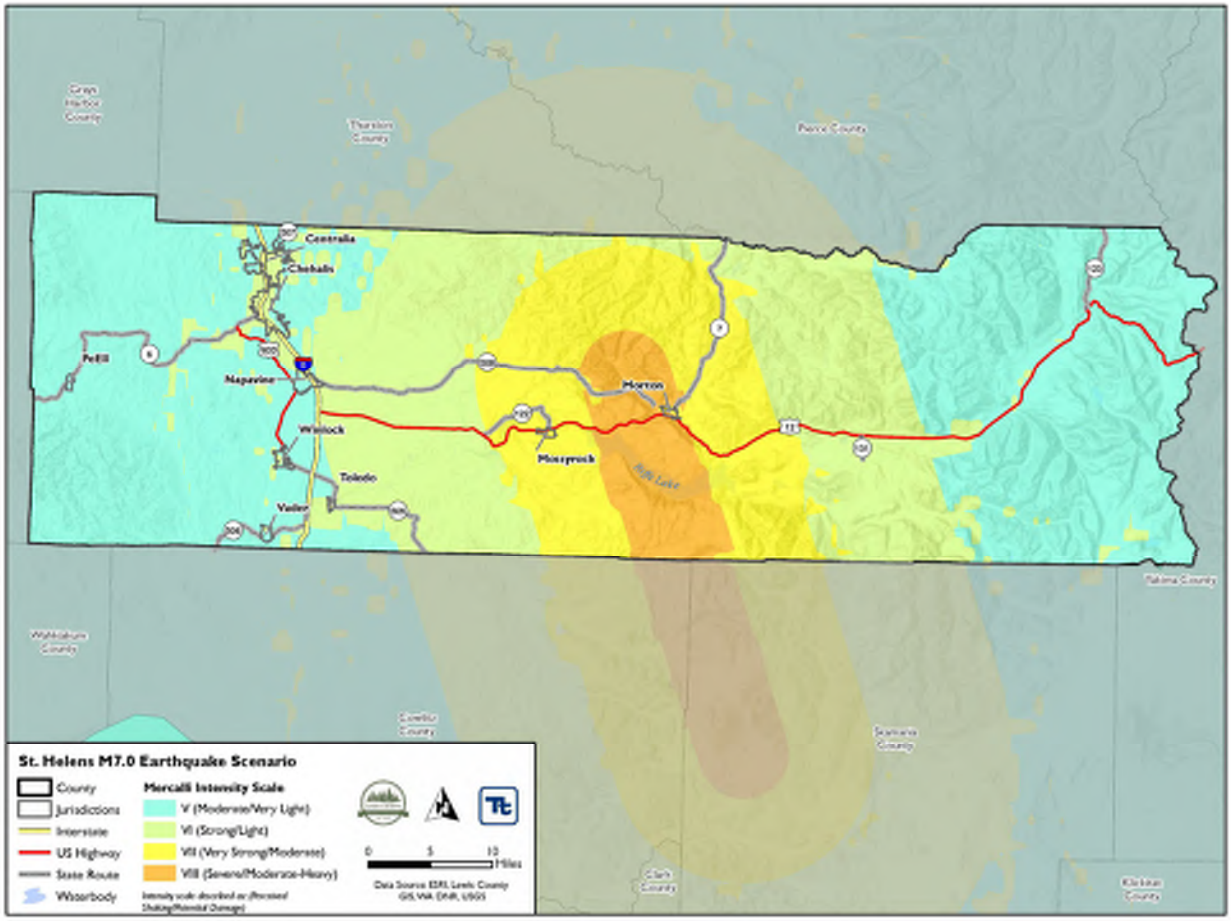
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0 5 10 Miles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County
Jurisdictions
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
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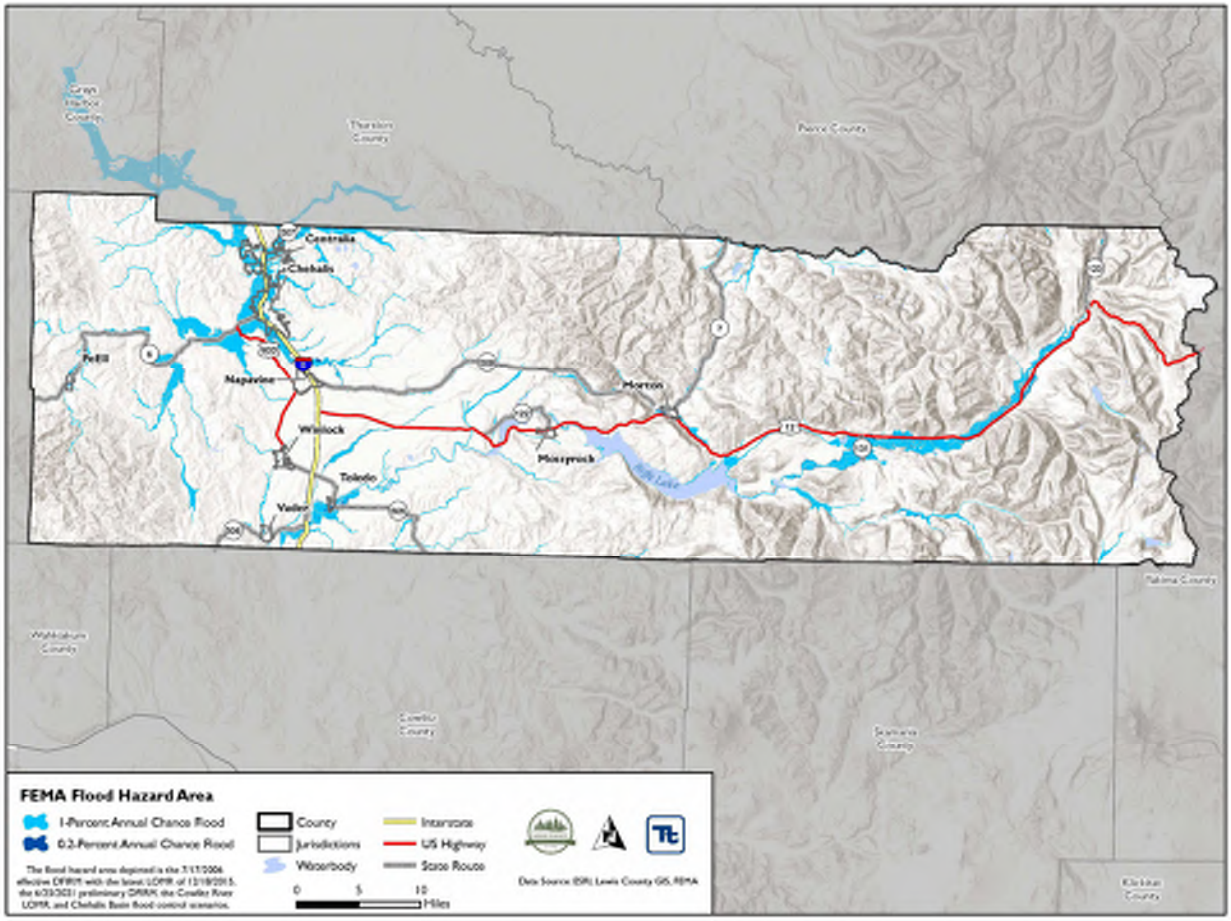
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Wahkiakum County
Cowlitz County
Skamania County
Yakima County
Klickitat County
FEMA Flood Hazard Area
1-Percent Annual Chance Flood
0.2-Percent Annual Chance Flood
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Waterbody
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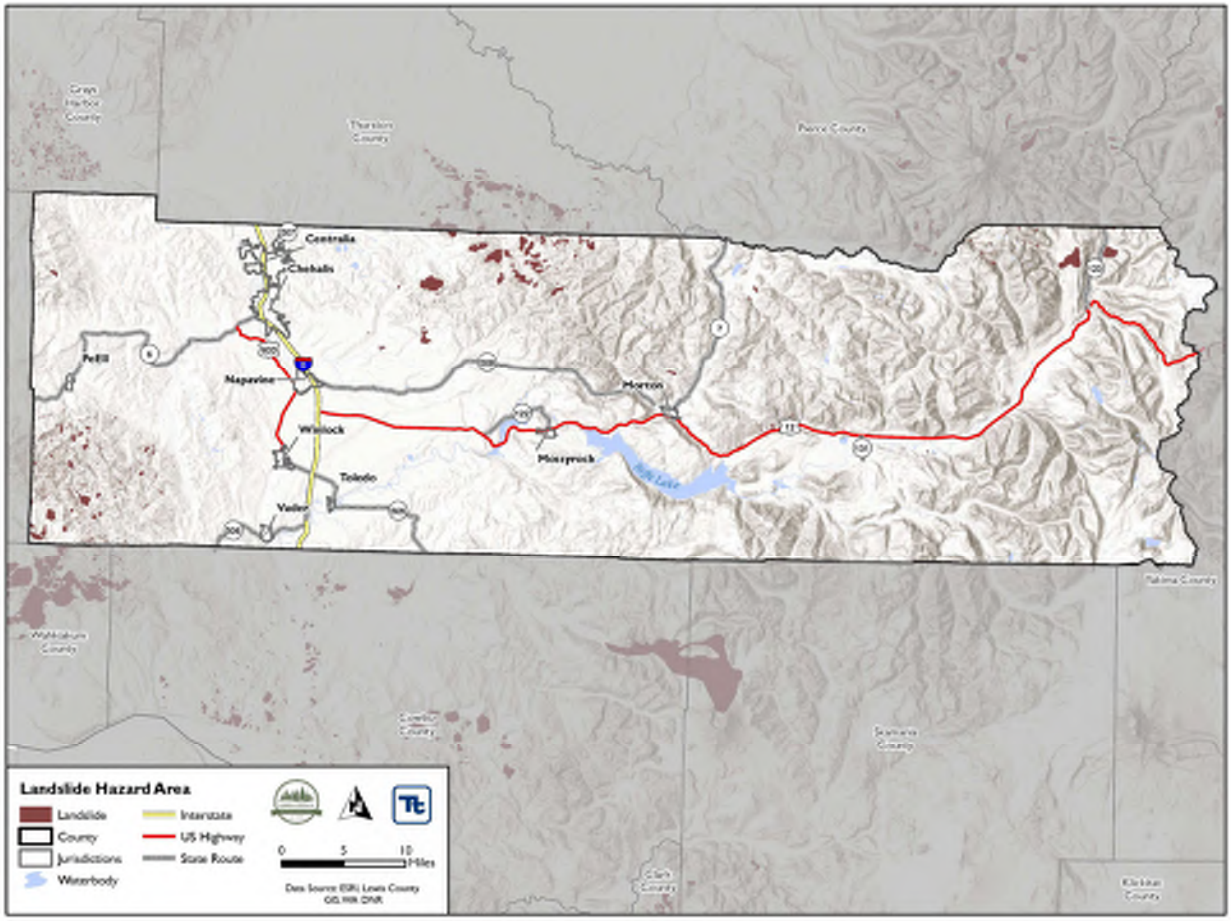
Data Source: ESRI, Lewis County GIS, FEMA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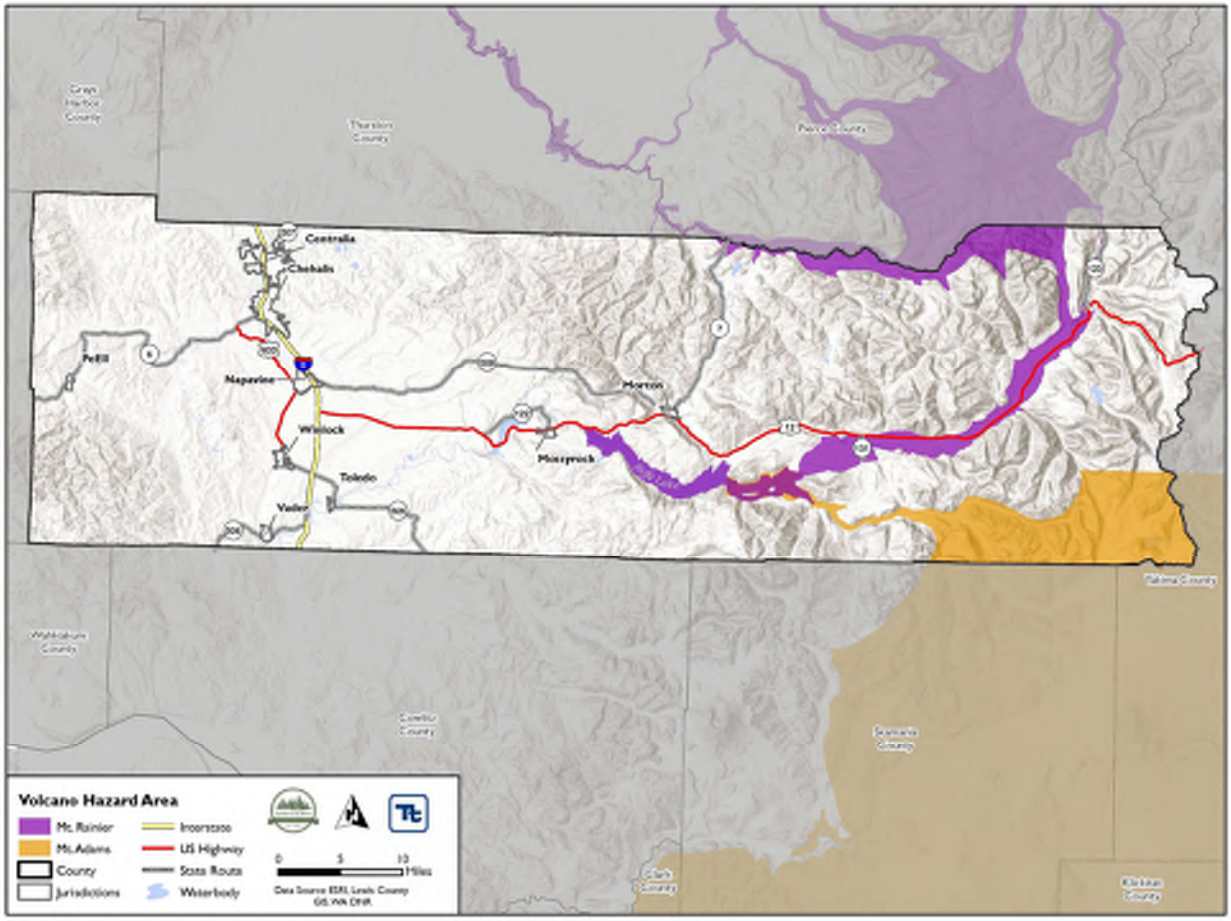
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Napavine
Morton
Winlock
Mossyrock
Toledo
Vader
Volcano Hazard Area
Mt. Rainier
Mt. Adams
County
Jurisdictions
Interstate
US Highway
State Route
Waterbody
0
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Miles

3.0 CITY OF CENTRALIA

3.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Emil Pierson, Community Development Director
PO Box 609
118 W. Maple Street
Centralia, WA 98531
Telephone: 360-330-7662
e-mail Address: epierson@cityofcentralia.com

Alternate Point of Contact
Hillary Hoke, Asst. Community Development Director
118 W. Maple Street
Centralia, WA 98531
Telephone: 360-330-7662
e-mail Address: hhoke@cityofcentralia.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 3-1.

Table 3-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Emil Pierson, AICP	Community Development Director
Hillary Hoke, CFM	Asst. Community Development Director/ Floodplain Manager
Andy Caldwell	Centralia Police Department Commander

3.2 Jurisdiction Profile

3.2.1 Location and Features

Centralia is the most populated city in Lewis County. Located 25 miles south of Olympia, the City covers an area of 7.4 square miles. The City of Centralia and its Urban Growth Area have a rich diversity of terrain and natural features. The City is surrounded by Ham Hill, Seminary Hill, Cooks Hill, and Davis Hill. The hills surround the City while the Chehalis River and the Skookumchuck River: are dominant features in the lowlands. The diverse landscape contains features such as steep slopes and floodplains that make development challenging and contain habitats that contribute to biological diversity. The northern portions of the City contain high-quality glacial deposits and alluvial river gravels. It is here that the City's aquifers and gravel mines are located. Historic coal mines are located in the Urban Growth Area and northeast of the City's jurisdiction.

3.2.2 History

The City of Centralia was settled in 1852 along the junction of the Chehalis and Skookumchuck Rivers. The city was founded by George Washington, the first free black man in the Washington Territory. He arrived from Missouri in 1851 with a friend, J.G. Cochran. Washington settled on the site of present-day Centralia, building a log cabin for an early dwelling. The city was platted and called Centerville in 1875 by Washington to serve as a transportation center, taking advantage of its location on the major north-south shipping routes and the new Northern Pacific Railroad line. The names he gave to streets are still used today, although the city itself was renamed Centralia in 1883 to avoid confusion with the city of

Centerville in Klickitat County. Platting in the 1800s parceled all available land into lots and street right-of-ways but did not dedicate space for public parks and other uses. However, Washington and his wife Mary Jane Coonness in 1881 donated much of their property for schools and churches and were very generous with their holdings in developing the area.

By 1920 Centralia was known as the "Hub City." Its rail depot was the largest outside of Portland and hosted 44 passenger trains daily. Fourteen hotels dotted Tower Avenue. Five theaters, 24 taverns, and 12 downtown restaurants entertained and served residents, conventioneers, and loggers on holiday. The demands of a flourishing economy forged Washington's first community college, Centralia College, in 1924.

By the mid-century, the rise of the automobile reduced rail passenger flow substantially, and Interstate 5 siphoned the currents of people and commerce away from downtown Centralia. The history of the era has been preserved by those who live here. Many historic homes and buildings along with the well-known murals can be seen on a short walking tour of downtown and in the Edison neighborhood. A revitalized turn-of-the-century shopping district adds to the charm of downtown Centralia.

3.2.3 Governing Body Format

The City of Centralia is a Council-Manager form of government. As described in the municipal code and the Revised Code of Washington, certain responsibilities are vested in the City Council and the City Manager. This form of government prescribes that a City Council's role is that of a legislative policy-making body that determines local laws, determines public policy, and gives direction to the City Manager to administer the affairs of the city government.

The City Council assumes responsibility for the adoption of this hazard mitigation plan; the Community Development Department will oversee its implementation.

The City consists of the following departments: City Administration, City Light, Community Development, Engineering, Finance, Human Resources, Police, and Public Works (water, sewer, and stormwater). Riverside Fire District handles fire issues for the City of Centralia.

3.3 Current Trends

3.3.1 Population

According to the Washington State Office of Financial Management (OFM), the population of Centralia as of April 1, 2022, was 18,300. Since 2000, the population has grown at an average annual rate of .985 percent.

3.3.2 Development

The City expects to see slow growth between 1-2% to continue with the continuation of new infill residential development and a few larger developments. The City is showing an uptick in new residential, commercial, and industrial developments throughout the City and its urban growth area (UGA). The City continues to see new residential developments out of the floodplain and on the adjacent hills like Cooks Hill and Seminary Hill. The City expects to see new residential projects

developed as pressure mounts for more affordable housing in the east and north sections of Centralia. The City has approved around 700 new housing units over the last 3 years and as these new developments start to be constructed the city will see additional demands for new services.

The City has seen new multi-family developments constructed close to Centralia College to support the student housing needs. Industrial and commercial developments continue to focus on north Harrison and by the Centralia Station vicinity. The Cooks Hill area where Providence Hospital is located is seeing limited new residential development and medical office buildings.

Identifying previous and future development trends is achieved through a comprehensive review of new permits and with the completion of a new Housing Plan and the 2018 Comprehensive Plan. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 3-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 3-2. Recent and Expected Future Development Trends.

Criterion							Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?							Yes
If yes, give the estimated area annexed and the estimated number of parcels or structures.	1) 50.92 acres; Fairview—5.61 acres in 2017; zoned R:4 2) 45.31 acres; Lewis County Fairgrounds in 2018; zoned OS/PF 3) 109 acres; W. Reynolds area - 37 parcels; mix-use residential, commercial, and industrial uses						
Is your jurisdiction expected to annex any areas during the performance period of this plan?							Yes
If yes, describe land areas and dominant uses. *If yes, who currently has permitting authority over these areas?*	Lewis County and the City of Centralia						
Are any areas targeted for development or major redevelopment in the next five years?							Yes
If yes, briefly describe, including whether any of the areas are in known hazard risk areas.	W. Reynolds area and Centralia Station—flooding Davis Hill, Seminary Hill, and south Scheuber Road—steep slopes						
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	**Single-Family**	37	26	30	28	28	14
	Multi-Family	2	24	6	33	52	79
	Other	4	4	3	9	11	0
	Total	43	54	39	70	91	93
Provide the number of new construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 27 • Landslide: 0 • High Liquefaction Areas: 0 • Wildfire Risk Areas: 0						

Criterion	Response
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	The City is limited on where new growth can develop based on the sewer location. Total Gross acres – 5,963.90 Net Acres – 6,064 Available Land – 1,472 acres 2023 Centralia City Limits Pop. – 18,400 = 7,572 Households/units 2022 UGA Population – 22,376 = 9,208 Households/units 2045 Est. Pop. (CL and UGA) – 24,000 = 9,876 Households/units Est. Pop. Growth – Low: 4,976; Med: 7,196; High: 14,929

3.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity-building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 3-3.
- Development and permitting capabilities are presented in Table 3-4.
- An assessment of fiscal capabilities is presented in Table 3-5.
- An assessment of administrative and technical capabilities is presented in Table 3-6.
- An assessment of education and outreach capabilities is presented in Table 3-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in
- Table 3-8.
- Classifications under various community mitigation programs are presented in Table 3-9.
- The community's adaptive capacity for the impacts of climate change is presented in 3-10.

Table 3-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	Yes	Yes	Yes
Comment:	Title 18- Adopted in Jan 2023; Ord. 2532 § 4, 2023; RCW Chapter 19.27; WA State Code Council			
Zoning Code	Yes	Yes	Yes	Yes
Comment:	Title 20- Adopted in July 2022; Ord. 2503 § 1, 2022; RCWs 35A.63; WA State Department of Commerce			
Subdivisions	Yes	Yes	Yes	No
Comment:	Title 19- Adopted in 2008; Ord. 2210 § 5, 2008; RCW 58.17; WA State Department of Commerce			
Stormwater Management	Yes	Yes	Yes	Yes
Comment:	Adopted by Ord. 2494 § 2, 2022; RCW 36.89 & RCW 77.55.161; WA State Department of Ecology			

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Post-Disaster Recovery	No	No	No	No
Comment:				
Real Estate Disclosure	No	No	No	No
Comment: Part of FEMA/NFIP req.				
Growth Management	Yes	Yes	Yes	No
Comment: RCW 36.70A; Ord. 2445 §§ 1, 2 (Exh. A) (part), 2020; WA State Department of Commerce				
Site Plan Review	Yes	No	No	No
Comment: CMC 20.84; Ord. 2209 § 2 (part), 2008				
Environmental Protection	Yes	Yes	Yes	Yes
Comment: Critical Areas Code Title 16; Ord. 2396 § 3, 2017; WA State Department of Ecology				
Flood Damage Prevention	Yes	Yes	Yes	Yes
Comment: City of Centralia CMC 16.21; Ord. 2532 § 3, 2023; WA State Department of Ecology				
Emergency Management	Yes	No	No	Yes
Comment: CMC 2.28; Ord. 1835 § 1 (part), 1995				
Climate Change	No	No	No	No
Comment:				
Other	No	No	No	No
Comment:				
Planning Documents				
Comprehensive Plan	Yes	Yes	Yes	Yes
Comment: Updated 2022; next update due in 2025; Ord. 2506 § 1, 2022 (RCWs 36.70A requires the plan; Department of Commerce).				
Capital Facilities Plan	Yes	Yes	Yes	Yes
How often is the plan updated? Annually				
Comment: Part of the Comprehensive Plan – CFP; Updated 2022; Ord. 2506 § 1, 2022 (RCWs 36.70A requires the plan; Department of Commerce).				
Disaster Debris Management Plan	No	No	No	No
Comment:				
Floodplain or Watershed Plan	No	No	No	No
Comment:				
Stormwater Plan	Yes	No	Yes	Yes
Comment: Adopted in 2021; RCWs 36.70A requires the plan; Department of Ecology				
Water Systems Plan	Yes	No	Yes	Yes
Comment: Ord. 2519 § 12, 2022; RCWs 36.70A requires the plan; Department of Ecology				
General Sewer/Facility Plan	Yes	No	Yes	Yes
Comment: Ord. 2461 § 12/8/2020; RCWs 36.70A requires the plan; Department of Ecology				
Habitat Conservation Plan	Yes	No	Yes	Yes
Comment: Part of the Comprehensive Plan – Environmental Element; Updated 2022; Ord. 2506 § 1, 2022 (RCWs 36.70A requires the plan; Department of Commerce).				
Economic Development Plan	Yes	No	No	No
Comment: Part of the Comprehensive Plan – Economic Development Element; Updated 2022; Ord. 2506 § 1, 2022 (RCWs 36.70A requires the plan; Department of Commerce).				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Shoreline Management Plan	Yes	Yes	Yes	Yes
Comment: Adopted in 2021; updated in 2023; Ord. 2532 § 1, 2023; WA State Department of Ecology				
Community Wildfire Protection Plan	No	No	No	No
Comment:				
Forest Management Plan	Yes	No	No	No
Comment: Chehalis River Watershed Landscape Level Master Forest Stewardship Plan-Seminary Hill Natural Area; Adopted by Resolution July, 2022				
Climate Action Plan	No	No	Yes	Yes
Comment: Part of the Comprehensive Plan – New Climate Element; RCWs 36.70A requires the plan; Department of Commerce.				
Comprehensive Emergency Management Plan (CEMP)	Yes	Yes	Yes	Yes
Comment: Resolution 2615; Oct 28, 2014; updating in 2023				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	No	No	No
Comment:				
Post-Disaster Recovery Plan	Yes	Yes	Yes	Yes
Comment: Part of the CEMP; updating in 2023				
Continuity of Operations Plan	Yes	Yes	Yes	Yes
Comment: Part of the CEMP; updating in 2023				
Public Health Plan	No	No	No	No
Comment:				
Other: Skookumchuck Dam Emergency Action Plan	No	Yes	No	Yes
Comment: Revised December 2007				
Other: Hazard Identification and Vulnerability Assessment (HIVA)	Yes	No	No	Yes
Comment: Adopted in 2009				
Lewis County Multi-Jurisdictional Hazard Mitigation Plan	Yes	No	No	Yes
Comment: Resolution #2638 approved Jan 26, 2016				

Table 3-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If not, who does? If yes, which department?	Community Development Department – Building
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	Yes

Table 3-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: City utilities; water, sewer, electric (base + usage)	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 3-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Community Development/ City Engineering/ Public Works/Riverside Fire	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Community Development/ City Engineering/Riverside Fire Authority	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Community Development/ City Engineering/ Riverside Fire Authority	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: City Finance; Finance Director	
Surveyors	Yes
If yes, Department/Position: Engineering; City Engineer	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: Community Development/City Engineering	
Scientist familiar with natural hazards in local area	Yes
If yes, Department/Position: Community Development/City Engineering	
Emergency manager	Yes
If yes, Department/Position: Administration/City Manager	
Grant writers	Yes
If yes, Department/Position: Community Development/ City Engineering/Public Works	

Table 3-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Flood Information Page and Emergency Management Page	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Floodplain Information	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Yes, Emergency Management	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Floodplain outreach; Lewis County Emergency Response	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alert System; State Emergency System; portable public notification system	Yes

Table 3-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (Department/Position)	Emil Pierson, Community Development Director; Hillary Hoke, CFM
Are any certified floodplain managers on staff in your jurisdiction?	Yes- Hillary Hoke, CFM
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* Ord. 2532 § 3, 2023	January 2023
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?* Elevation – Homes 3 feet above BFE & other codes	Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps Adopted? *If no, state why. If yes, what is the effective date?* Flood Insurance Rate Map (FIRM) dated June 1, 1982, and any revisions thereto are adopted	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)?	Yes
If yes, is your jurisdiction interested in improving its CRS Classification?	Yes
If no, is your jurisdiction interested in joining the CRS program?	
How many flood insurance policies are in force in your jurisdiction?[a]	463
What is the insurance in force?	$125,548,000
What is the premium in force?	$43,256
How many total loss claims have been filed in your jurisdiction?[a]	752
What were the total payments for losses?	$26,676,324

Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance

After a flood event or other event, site visits are conducted in damaged areas and prior to the issuance of any building permits reviews are conducted to determine if the project meets the 50% threshold for substantial damage/substantial improvement. Residential Substantial Damage Estimator sheets are used to document findings and make the determination.

"Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would be equal to or exceed fifty percent of the market value of the structure before the damage occurred.

"Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the "start of construction" of the improvement over a ten-year period. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or
2. Any alterations of a "historic structure"; provided, that the alteration will not preclude the structure's continued designation as a "historic structure."

a. According to FEMA statistics as of January 18, 2024.

Table 3-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes	11160	May 2019
DUNS #	Yes	079267449	2023
UBI #	Yes	211-000-432	2023
UEID (unique entity ID)	Yes	F5BUN38155F5	2023
Community Rating System	Yes	Class 6	Dec. 2022
Building Code Effectiveness Grading Schedule	Yes	Class 3	2019
Public Protection	No	No	No
Storm Ready	No	No	No
Firewise	No	No	No

Table 3-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Med
Comment: Drought, flooding, wildfire, lack of snowpack = reduction in hydro-power, heat island effect, greenhouse gases	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: None will be considered as part of the 2025 Comprehensive Plan update	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment: RCW 36.70A, will be considered in 2025 Comprehensive Plan	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: None will be considered as part of the 2025 Comprehensive Plan update	
Identified strategies for adaptation to impacts	Low
Comment: None will be considered as part of the 2025 Comprehensive Plan update	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment: RCW 36.70A, will be considered in 2025 Comprehensive Plan update	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy's current capacity to adapt to climate impacts	Medium
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Medium
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

3.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

3.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Building Regulations**—Building Codes (CMC 18.04) Ord. 2532 § 4, 2023
  - International Building Code (2018)
  - International Residential Code (2018)
  - The National Electric Code (2017)
  - Uniform Plumbing Code, 2018 Edition
  - 2018 Washington State Energy Code
  - The International Mechanical Code (2018)/2018 International Fuel Gas Code, 2018 NFPA 58 and 2017 NFPA 54
  - The International Existing Building Code, 2018 Edition
  - 2018 International Wildland-Urban Interface Code
  - International Property Maintenance Code, 2018 Edition
  - International Fire Code, 2018 Edition
- **Critical Areas Ordinance (Title 16)** – Ord. 2396 § 3, 2017
  - Shoreline – see Shoreline Master Plan
  - Wetlands – (CMC 16.17) Ord. 2396 § 8, 2017
  - Geologically Hazardous Areas- (CMC 16.19) Ord. 2232 § 7 (Exh. A), 2009
  - Floodplain Management (CMC 16.21) Ord. 2532 § 2, 2023
- **Shoreline Master Plan** - Standards for the regulation of shorelines. Ord. 2423 § 1 (part), 2019
- **Stormwater Plan**— Stormwater Master Plan- Ord. 2494 § Feb 2022
- **Stormwater Management Documents** - Stormwater Requirements (CMC 18.15) Ord. 2494 § 2, 2022

3.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Centralia Comprehensive Plan**—Integrate the hazard mitigation plan goals into the climate, environmental, and land use elements. – Ord. 2506 § 1, 2022 (will be updated in 2025)
  - Environmental
  - Land Use
  - Climate Action Plan
  - Utilities
  - Public Safety
  - Capital Improvement Plan
- **Centralia General Sewer Facility Plan**— Ord. 2461 § 12/2020
- **Electric Utility Resource Plan**— Resolution 2689-B dated 8-28-2018
- **Electrical Infrastructure Capital Plan** – Adopted in 2017
- **Water Systems Plan**— Ord. 2519 § 12, 2022
- **Design and Development Guidelines** - Ord. 2494 § 1, 2022

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

3.6 Risk Assessment

3.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 3-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 3-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$ Not Available
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$ Not Available
Biological, COVID-19	4481	1/20/2020-9/11/2023	$ Not Available

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Biological, COVID-19	3427	1/20/2020-9/1/2023	$ Not Available
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$ Not Available
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$ Not Available
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$ Not Available
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$ Not Available
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$ Not Available
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$ Not Available
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$ Not Available
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$ Not Available
Earthquake	1361	2/28-3/16/2001	$ Not Available
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$ Not Available
Severe Storms, Flooding	1100	1/26-2/23/1996	$ Not Available
Storms, High Winds, Floods	1079	11/7-12/18/1995	$ Not Available
Severe Storm, High Winds	981	1/20-1/21/1993	$ Not Available
Severe Storms, Flooding	784	11/22-11/29/1986	$ Not Available
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$ Not Available
Severe Storms, Mudslides, Flooding	545	12/10/1977	$ 6M
Severe Storms, Flooding	492	12/13/1975	$ 250-300K
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$ 10M
Severe Storms, Flooding	322	2/01/1972	$ 3-5M
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$ 400K
Heavy Rains and Flooding	185	12/29/1964	$ 430M

3.6.2 Hazard Risk Ranking

Table 3-12 and Table 3-13 present a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 3-12. Hazard Risk Ranking – City Limits.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	48	High
2	Dam Failure	36	High
3	Earthquake	36	High
4	Severe Weather	18	Medium
5	Landslide	12	Low
6	Avalanche	0	Low
7	Wildfire	0	Low
8	Volcano	0	Low

Table 3-13. Hazard Risk Ranking – UGA.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	32	Medium
2	Dam Failure	32	Medium
3	Flood	27	Medium
4	Severe Weather	18	Medium
5	Landslide	12	Low
6	Avalanche	0	Low
7	Wildfire	0	Low
8	Volcano	0	Low

3.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: **25 RLP; 13 residential, 12 commercial**
- Number of FEMA-identified Severe-Repetitive-Loss Properties: **3 SRL properties; 3 commercial**
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: **34 SLP and 1 SRLP**

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None.

3.7 Status of Previous Plan Actions

Table 3-14 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 3-14. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
The Floodway, the Special Flood Risk Zone and the 100-year Floodplain shall be regulated to protect human life, property and the public health and safety of the citizens of Centralia; minimize the expenditure of public money; and maintain the city's flood insurance eligibility while avoiding regulations which are unnecessarily restrictive or difficult to administer. *Comment:* Integrated into another goal			X	CEN-7
Adopt and enforce the international building code to ensure adequate protection in construction against wildfires (Fire Resistive Construction Standards & Wildland Urban Interface), earthquakes (in Seismic Zone 3), flooding, and severe storms (Wind Exposure B). *Comment:*			X	CEN-15
Provide public education and the importance of having an emergency management plan about hazards that affect the city focusing on wildfires, earthquakes, dam failure, flooding, and severe weather events. *Comment:*			X	CEN-18
Maintain the emergency operations center (EOC) and perform training regularly on all natural disasters focusing on wildfires, earthquakes, dam failure, flooding, and severe weather events. *Comment:*			X	CEN-16
Encourage nonstructural solutions to flood hazards including restricting development in flood-prone areas, stormwater runoff management, and upstream watershed vegetation management to protect and enhance the biological systems and public access opportunities of the shoreline and adjacent uplands. *Comment:*			X	CEN-8
Encourage all local utilities to plan and implement practices that could limit the negative effects of natural disasters, especially wildfires, earthquakes, dam failure, flooding, and severe weather events on the residents of Centralia. *Comment:*			X	CEN-14

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Develop a robust flood control program that integrates the unique situation faced by the City within its location in the 100-year floodplain and its need for flood control in larger storm events, while at the same time needing to control the effects of smaller storms in terms of both quantity and quality of runoff and the desire to limit development in the floodplain and improving the natural environment. *Comment:*			X	CEN-9
Continue to focus on the mitigation of repetitive loss properties (RLP) and severe repetitive loss properties (SRLP) through property purchase, elevation, or flood-proofing. *Comment:*			X	CEN-11
The Community Development Department will maintain the flood protection information and add updated materials as needed at the Centralia public library. Information in this collection includes but is not limited to natural and beneficial functions of floodplains, flood plans, floodplain maps, local early warning and evacuation routes, and updated local, state, and federal materials. *Comment:* Integrated into another action			X	CEN-10
Maintain or improve the City's status in the National Flood Insurance Program and continue to require and maintain elevation certificates; provide flood protection information; and encourage residents to have insurance for national disasters with a focus on coverage for wildfires, earthquakes, flooding, and severe weather events *Comment:* Integrated into another action			X	CEN-4
The Building Official will continue to require and maintain elevation certificates for permitted development within the floodplain. Elevation certificates are maintained by address. *Comment:* Integrated into another action			X	CEN-4
Provide emergency generator or secondary power capability for all pump stations; upgrade construction at all pump stations to the latest seismic and wind standards. *Comment:* Integrated into another action			X	CEN-6
Plan the stormwater management system to be consistent with policies regarding flooding, wetlands, land use, and water quality. *Comment:*	X			
Develop an integrated program for quantity and quality control that recognizes the unique situation faced by the City within its location in the 100-year floodplain and its need for flood control in larger storm events, while at the same time needing to control the effects of smaller storms in terms of both quantity and quality of runoff. *Comment:* Integrated into another goal			X	CEN-9

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Apply best management practices to reduce pollutant loading and minimize the effects of contaminated sediments on the city's waterways. Increase preservation of the open space and drainage corridor through easements, deeding land to the city, improve water quality, eliminate failed septic systems, fence out livestock, improve wildlife habitat, do restoration planting projects, increase regulations such as greater setbacks where applicable, implement specialized best management practices to minimize problems in the long run *Comment:*	X			
Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks. Integrate these concepts with natural functions such as drainage, agriculture, and topographic features. *Comment:* Integrated into another action			X	CEN-8
Encourage residents to sign up for Lewis County's Code Red System. *Comment:* Integrated into another action			X	CEN-17
Encourage all critical facilities including nursing homes, chemical storage facilities, schools, and electric and telephone substations to have a working emergency plan in place and that contacts are up-to-date. *Comment:* Integrated into another action			X	CEN-13
Maintain the emergency operations center (EOC) and have training regularly on flooding and other hazards. *Comment:* Integrated into another action			X	CEN-16
Upgrade all city-owned critical facilities to ensure continued operations during hazard events. *Comment:* Integrated into another action			X	CEN-13,14
Provide on-going public education at all levels, from the renter to the homeowner, regarding residential, commercial, and industrial best management practice issues, flood hazard mitigation, water quality, and related local issues. *Comment:* Integrated into another action			X	CEN-18
Provide public education about natural hazards that affect the City focusing on wildfires, earthquakes, dam failure, flooding, and severe weather events. Outreach efforts shall include but are not limited to specially targeted mailings to realtors, insurance agents, and lenders, training sessions at neighborhood meetings, the public library, and any other means identified. *Comment:* Integrated into another action			X	CEN-4,7,18
Provide on-going public education aimed at residents, businesses, and industries about stormwater and its effects on water quality, flooding, and fish/wildlife habitat and discourage dumping of waste material or pollutants into storm drains. *Comment:*	X			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
The Community Development Department including the Building Official will continue to make flood map determinations in response to public inquiry. *Comment:*	X			
Maintain updated maps and continue to work on automated base maps and overlays, leading to a planning-level geographic information system. Continue data collection and data entry as new information and data sources become accessible. *Comment:* Integrated into another action	X		X	CEN-12
Expand the Public Information program to address other natural hazards where additional public information will be helpful, such as seismic retrofits for homes and other hazard-related topics. *Comment:* Integrated into another action			X	CEN-15, 18
Improve communication and public awareness of natural hazards to residents and businesses before, during, and following emergencies. *Comment:* Integrated into another action			X	CEN-18
Continue annual bridge inspections. *Comment:* Integrated into another action			X	CEN-13
Operate Incident Command Post in time of emergency. *Comment:* Integrated into another action			X	CEN-16
Isolate utilities in damaged areas. *Comment:*		X		
Require engineered foundation systems and geotechnical reports for building in critical areas. *Comment:*			X	CEN-15
Maintain a map of landslide areas in the permit application office. *Comment:* Incorporated into another goal			X	CEN-12
Coordinate with Lewis County for growth in critical areas. *Comment:* The City will continue to coordinate with Lewis County on growth in critical areas	X			
City light tree maintenance program to trim trees around power lines. *Comment:* The City will continue to trim trees around powerlines	X			
Retrofit existing overhead lines to underground as time and budget allow. *Comment:* The City will continue to bury powerlines	X			
Continue the current City Light practice of burying new utility lines as appropriate. *Comment:* The City will continue to bury powerlines	X			

3.8 Hazard Mitigation Action Plan

Table 3-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 3-16 identifies the priority for each action. Table 3-17 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 3-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CEN-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Wildfire, earthquake, flood					
Existing	1,5	Community Development	Public Works	High	HMGP, BRIC, FMA	Long-term
Action CEN-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community, including the zoning ordinance, stormwater plan, and the comprehensive plan.						
Hazards Mitigated:	Wildfire, earthquake, dam failure, flood, and severe weather					
New and Existing	2	Community Development	Public Works	Low	Staff Time, General Funds	Medium-term
Action CEN-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Wildfire, earthquake, dam failure, flood, and severe weather					
New and Existing	6	Community Development	Public Works	Low	Staff Time, General Funds	Medium-term
Action CEN-4— Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Require, maintain, and provide elevation certificates • Require all new developments in the floodplain to obtain a floodplain permit • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts • Encourage people to have flood insurance.						
Hazards Mitigated:	Flood					
New and Existing	1,3,4,5,6	Community Development	Public Works	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]

Action CEN-5—Identify and pursue strategies and develop a climate change plan to increase adaptive capacity to climate change, including but not limited to the following:
• Droughts and water shortages;
• Weather extremes events- precipitation (rain, snow), wind, heat, and cold;
• Changes in energy generation and usage (decrease in natural gas and fossil fuels and increase in electric uses);
  ○ Energy shortages;
  ○ energy resiliency; and
  ○ energy grid resiliency.						

Hazards Mitigated:	Wildfire, flood, severe weather					
New and Existing	1, 2,3,6	Community Development	Public Works	Low	Staff Time, General Funds, Dept of Commerce Grant	Short-term
Action CEN-6—Purchase generators or provide secondary power for critical facilities and infrastructure that lack adequate backup power, including all pump stations.						
Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, landslide, avalanche, and volcano					
New and Existing	1	Public Works	City Light	Low	Staff Time, General Funds	Medium-term
Action CEN-7— The 100-year floodplain shall be regulated to protect public health, safety, welfare, property, and the environment through participating in the National Flood Insurance Program, enforcing the adopted Floodplain Management Code, and Critical Areas Ordinances.						
Hazards Mitigated:	Flood					
New and Existing	1,2,3,4,5,6	Community Development	Public Works	Low	Staff Time, General Funds	Short-term
Action CEN-8— Encourage nonstructural solutions to flood hazards including restricting development in flood-prone areas, stormwater runoff management, and upstream watershed vegetation management to protect and enhance the biological systems and public access opportunities of the shoreline and adjacent uplands.						
Hazards Mitigated:	Flood					
New and Existing	1,5	Community Development	Public Works	Low	Staff Time, General Funds	Short-term
Action CEN-9— Develop a robust flood control program that integrates the unique situation faced by the City within its location in the 100-year floodplain and its need for flood control in larger storm events, while at the same time needing to control the effects of smaller storms in terms of both quantity and quality of runoff and the desire to limit development in the floodplain and improving the natural environment.						
Hazards Mitigated:	Flood					
New and Existing	1,5	Public Works	Community Development	Low	Staff Time, General Funds	Mid-term

Action CEN-10— The Community Development Department will maintain the flood protection information and add updated materials as needed at the Centralia public library and on the city's webpage. Information includes but is not limited to natural and beneficial functions of floodplains, flood plans, floodplain maps, local early warning and evacuation routes, and updated local, state, and federal materials.

Hazards Mitigated:	Flood					
New and Existing	1,5	Community Development	Public Works	Low	Staff Time, General Funds	Short-term

Action CEN-11— Continue to focus on the mitigation of repetitive loss properties (RLP) and severe repetitive loss properties (SRLP) through property purchase, elevation, or flood-proofing.

Hazards Mitigated:	Flood					
Existing	1,5	Community Development	Public Works	Low	Staff Time, General Funds	Short-term

Action CEN-12— Maintain updated maps and continue to work on automated base maps and overlays, leading to a planning-level geographic information system that takes into consideration areas prone to wildfires, earthquakes (liquid-faction), dam failure (flooding), flood events, severe weather, and volcano. Continue data collection and data entry as new information and data sources become accessible.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
New and Existing	1,3,5	Community Development	Public Works	Low	Staff Time, General Funds	Short-term

Action CEN-13— Encourage all critical facilities including city facilities, schools, hospital and medical facilities, supportive housing facilities, library, nursing homes, chemical storage facilities, and transportation facilities (bridges) to do regular inspections and have a emergency plan in place with up-to-date contacts focusing on disasters such as wildfires, earthquakes, dam failure, flooding, severe weather events, and volcano.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
Existing	2,3,4,6	Building/Public Works	Community Development	Low	Staff Time, General Funds	Medium-term

Action CEN-14— Encourage all local utilities to plan and implement practices that could limit the negative effects of natural disasters, especially wildfires, earthquakes, dam failure, flooding, and severe weather events on the residents of Centralia.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
New and Existing	2,3,4,6	Community Development	Public Works, City Light	Low	Staff Time, General Funds	Medium-term

Action CEN-15—Adopt and enforce the international building code to ensure adequate protection in construction against wildfires (Fire Resistive Construction Standards & Wildland Urban Interface), earthquakes (in Seismic Zone 3), flooding, and severe weather (Wind Exposure B).

Hazards Mitigated:	Wildfires, Earthquakes, flooding, severe weather					
New and Existing	1,6	Community Development	Public Works	Low	Staff Time, General Funds	Short-term

Action CEN-16— Maintain the emergency operations center (EOC) and perform training regularly on all disasters focusing on wildfires, earthquakes, dam failure, flooding, and severe weather events.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
New	3,4,6	Police Department	Riverside Fire Authority	Low	Staff Time, General Funds	Short-term

Action CEN-17— Encourage residents to sign up for Lewis County's Alert System, encourage residents to have insurance for national disasters, and have an emergency grab and go bag with a focus on for wildfires, earthquakes, flooding, and severe weather events.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
New and Existing	3,4,6	Police Department	Community Development	Low	Staff Time, General Funds	Short-term

Action CEN-18— Provide public education on disasters before, during, and after the event and the importance of having an emergency management plan about hazards that affect the city focusing on wildfires, earthquakes, dam failure, flooding, and severe weather events.

Hazards Mitigated:	Wildfires, earthquakes, dam failure, flooding, severe weather events, landslide, avalanche, and volcano					
New and Existing	1,2,3,4,6	Police Department	Community Development	Low	Staff Time, General Funds	Short-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 3-16. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
CEN-1	2	High	High	Yes	Yes	No	Low	High
CEN-2	1	High	Low	Yes	No	Yes	Med	Low
CEN-3	1	High	Low	Yes	No	Yes	Med	Low
CEN-4	5	High	Low	Yes	No	Yes	High	Low
CEN-5	4	Med	Low	Yes	Yes	Yes	High	High
CEN-6	1	High	High	Yes	Yes	Yes	Med	Low
CEN-7	6	High	Low	Yes	No	Yes	High	Low
CEN-8	2	High	High	Yes	Yes	No	Med	Med
CEN-9	2	High	High	Yes	Yes	No	Med	Med
CEN-10	2	High	Low	Yes	No	Yes	High	Low
CEN-11	2	High	High	Yes	Yes	No	Low	High
CEN-12	3	High	Low	Yes	No	Yes	High	Low
CEN-13	4	High	Low	Yes	No	Yes	High	Low
CEN-14	4	High	Low	Yes	No	Yes	High	Low
CEN-15	2	High	Low	Yes	No	Yes	High	Low
CEN-16	3	High	Low	Yes	No	Yes	High	Low
CEN-17	3	High	Low	Yes	No	Yes	High	Low

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
CEN-18	5	High	Low	Yes	No	Yes	High	Low

Table 3-17. Analysis of Mitigation Actions.

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Flood	CEN-1,2,4,6,7,8,9,10,11,12,13,14,15,16,17,18	CEN-1,2,4,6,7,8,9,10,11,12,13,14,15	CEN-4,7,8,10,12,18	CEN-2,4,7,8,9,10,12	CEN-2,6,13,15,16,17,18	CEN-2,11	CEN-4,7,10,11,12,13,14,15	CEN-2,4,13,14,15,17,18
Dam Failure	CEN-2,13,14,17,18	CEN-2,12,117,183,14,	CEN-12,17,18	CEN-12	CEN-2,6,13,16, 17,18	CEN-2,12	CEN-12,13,14	CEN-2,13,14 17,18
Earthquake	CEN-2,6,13,14,15,17,18	CEN-2,6,12,13,14,15,17,18	CEN-12,17,18	CEN-12	CEN-2,6,13,15,16,17,18	CEN-2,12	CEN-12,13,14,15	CEN-2,13,14,15, 17,18
Medium-Risk Hazards								
Severe Weather	CEN-2,6,13,14,15,16,17,18	CEN-2,6,13,14,15, 17, 18	CEN-17, 18	CEN-	CEN-2,6,13,15, 16, 17,18	CEN-	CEN-13,14,15	CEN-2,13,14,15, 17, 18
Landslide	CEN-2,6,12,13,14, 16, 17,18	CEN-2,6,12,13,14,17,18	CEN-12,17,18	CEN-12	CEN-2,6,17,18	CEN-	CEN-12	CEN-2,13,14, 17,18
Low-Risk Hazards								
Avalanche	CEN-2,6,12,13,14, 16, 17,18	CEN-2,6,12,13,14,17,18	CEN-12,17,18	CEN-12	CEN-2,6,17,18	CEN-	CEN-12	CEN-2,13,14, 17,18
Wildfire	CEN-1,2,6,13,14,15, 17,18	CEN-1,2,6,12,13,14,15,17,18	CEN-12,17,18	CEN-12	CEN-2,6,13,15,16,17,18	CEN-12	CEN-12,13,14,15	CEN-2,13,14,15, 17,18
Volcano	CEN-2,6,12,13,14, 16, 17,18	CEN-2,6,12,13,14,17,18	CEN-12,17,18	CEN-12	CEN-2,6,17,18	CEN-	CEN-12	CEN-2,13,14, 17,18

3.9 Public Outreach

Table 3-18 lists public outreach activities for this jurisdiction.

Table 3-18. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
City Council (workshop) at adoption		

3.10 Information Sources Used for This Annex

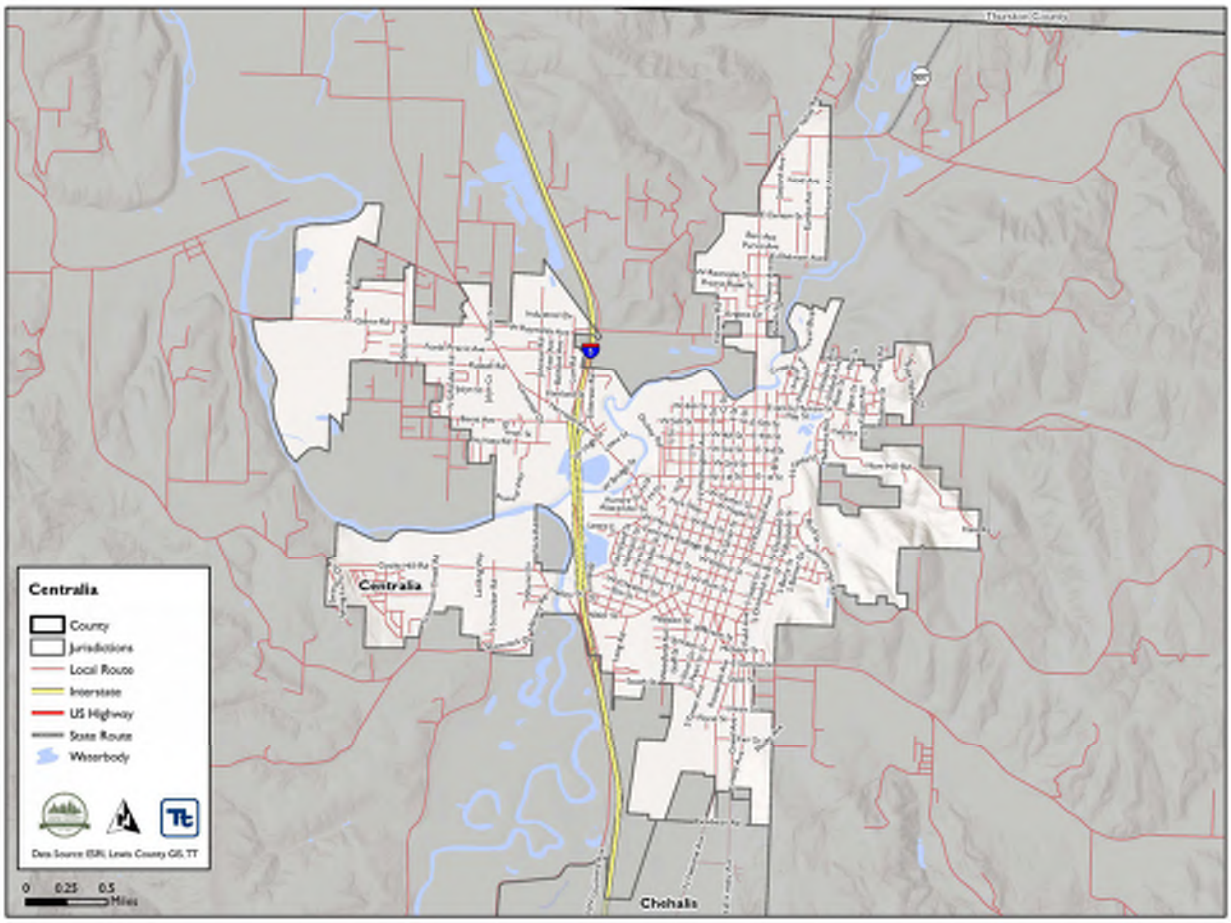
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

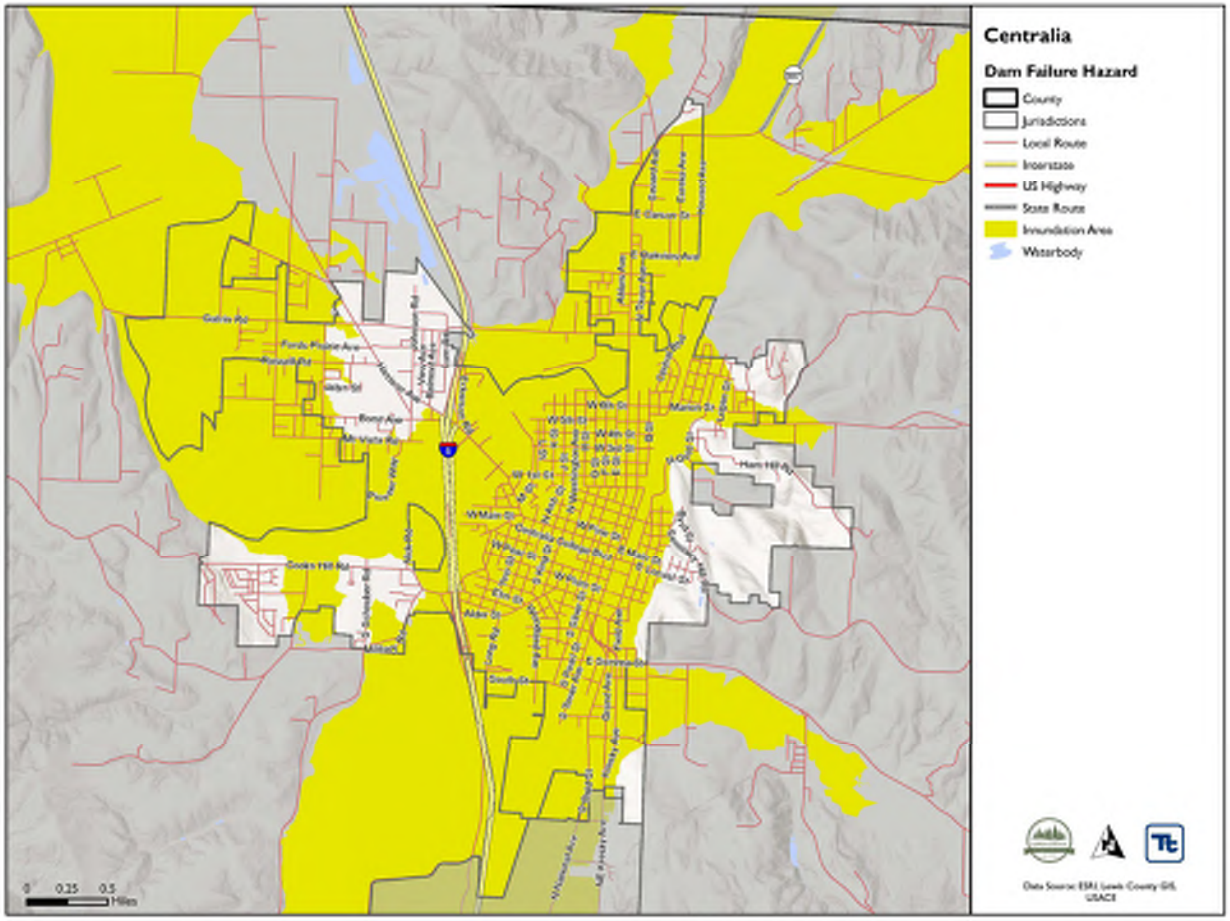
- **City of Centralia Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
  - Title 16 Environment
  - Title 18 Building Regulations
  - Title 20 Zoning
- **City of Centralia Flood Damage Prevention Ordinance (CMC 16.21)**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **City of Centralia Shoreline Management Plan**—Reducing development in environmentally sensitive areas like shoreline areas.
- **City of Centralia Critical Areas Ordinance (Title 16)**—Limiting development in environmentally sensitive areas like geological hazardous areas, steep slopes, wetlands, and floodplains.
- **Lewis County Multi-Jurisdictional Hazard Mitigation Plan**—2015

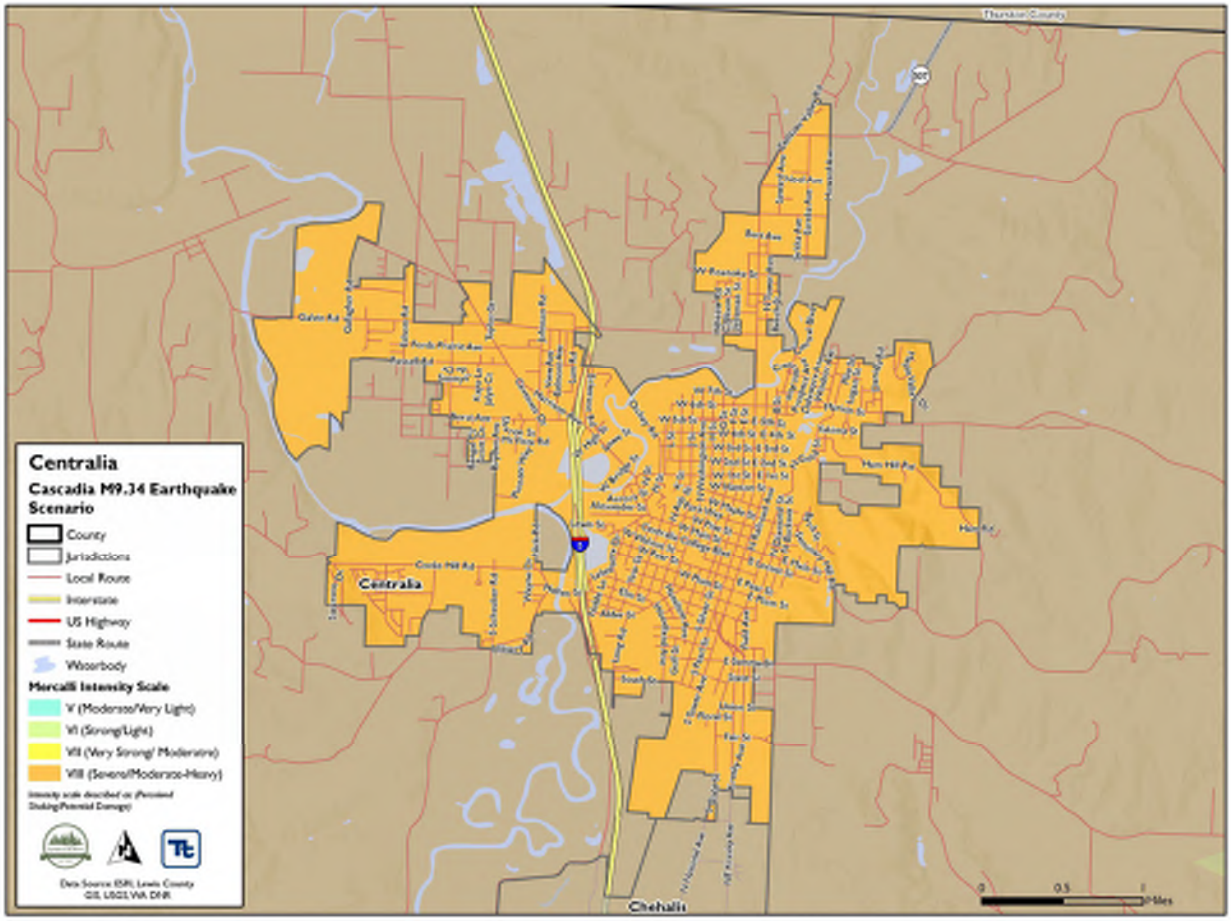
The following outside resources and references were reviewed:

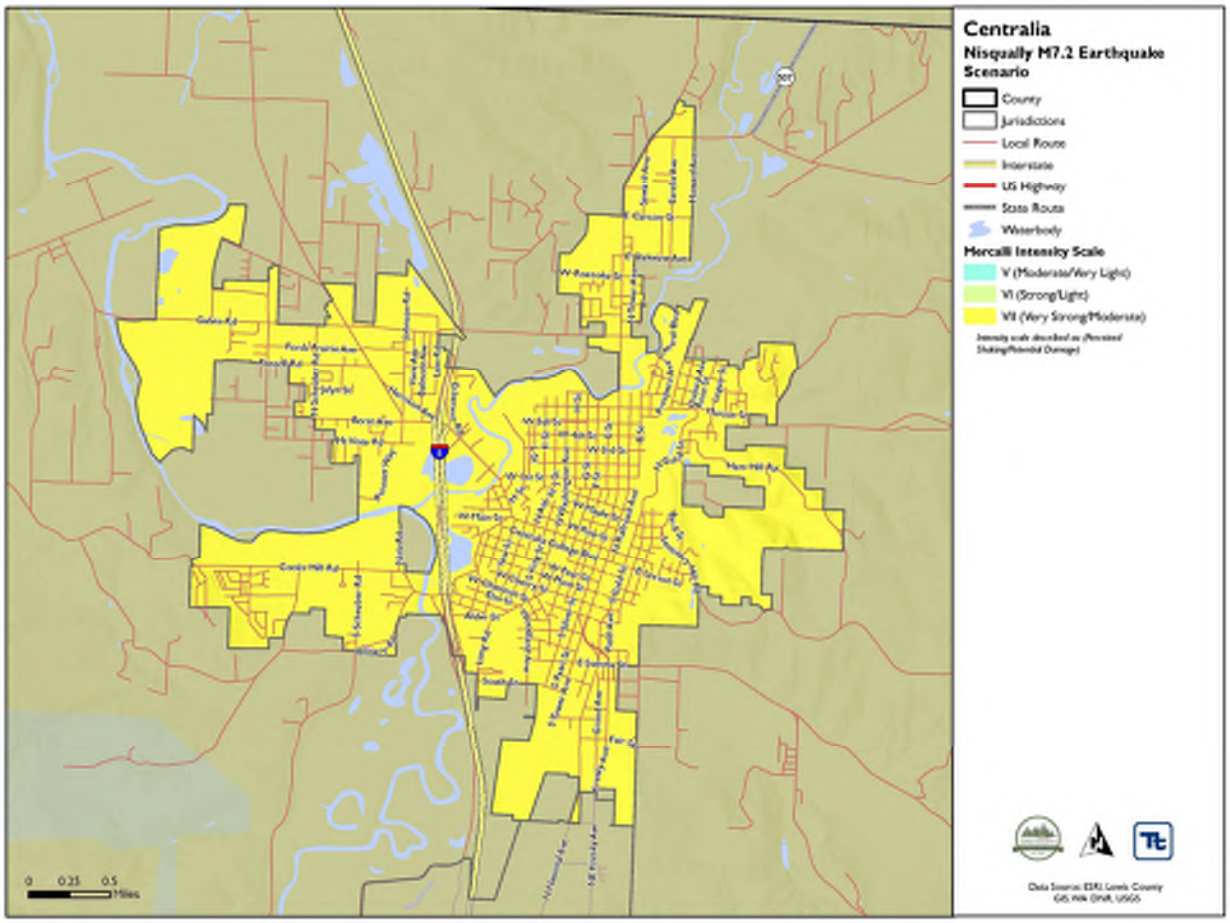
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

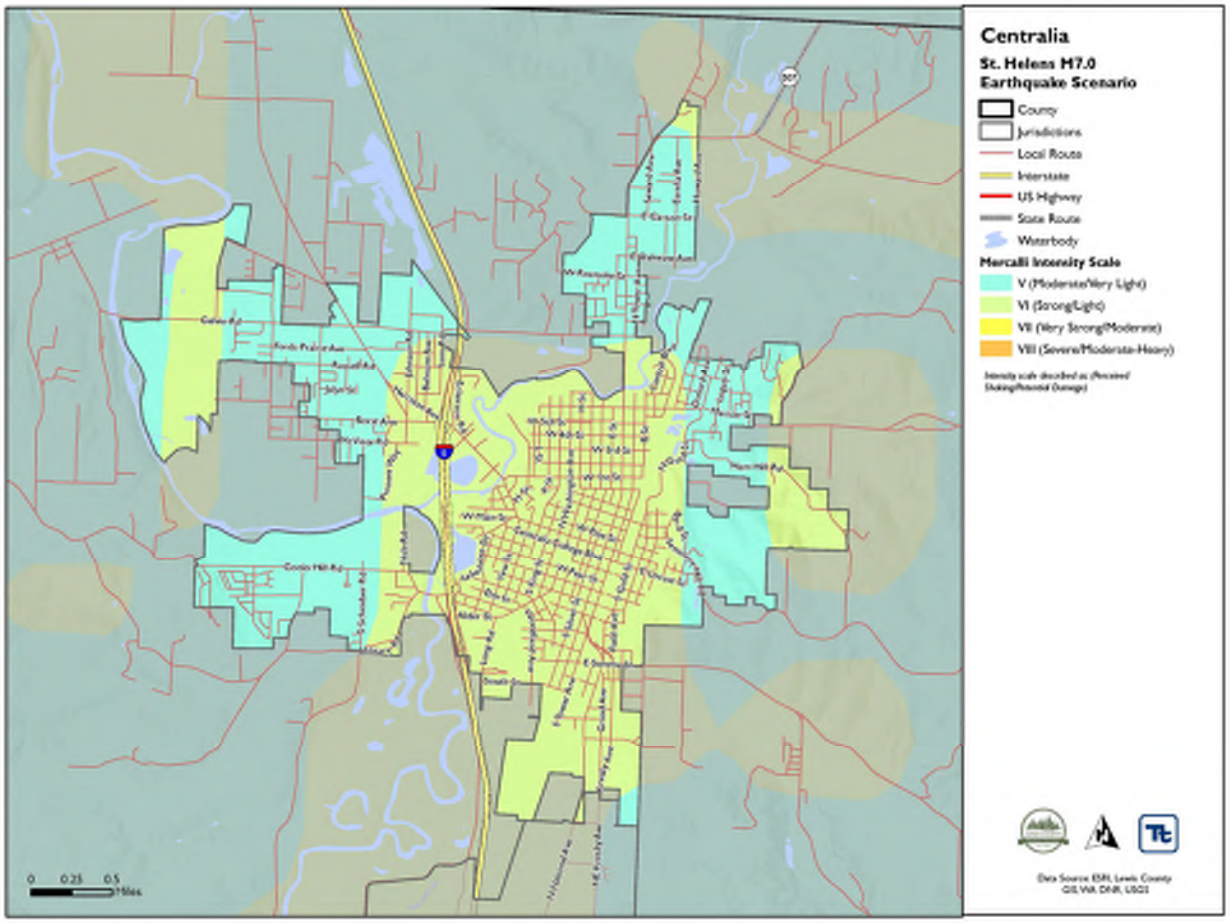
3.11 Hazard Maps

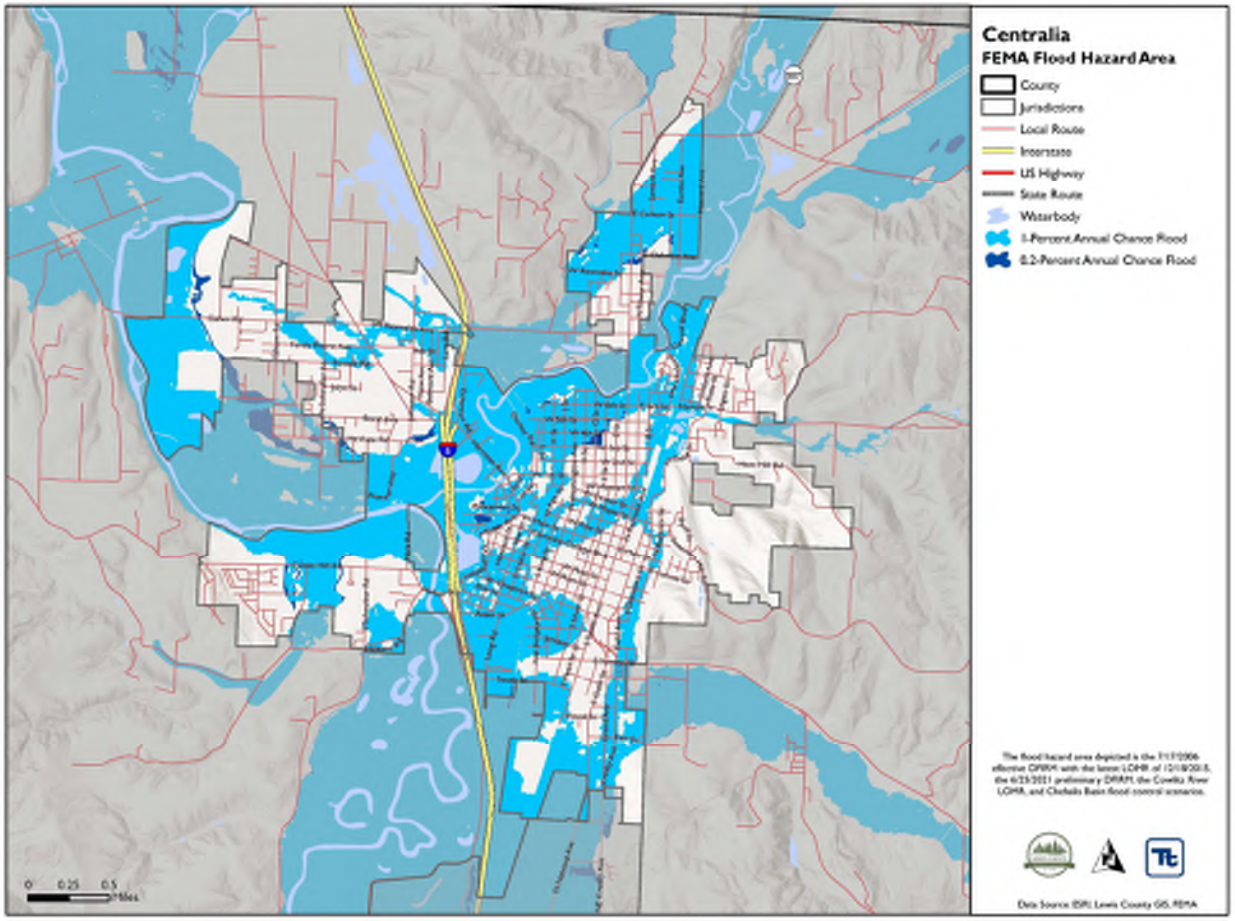


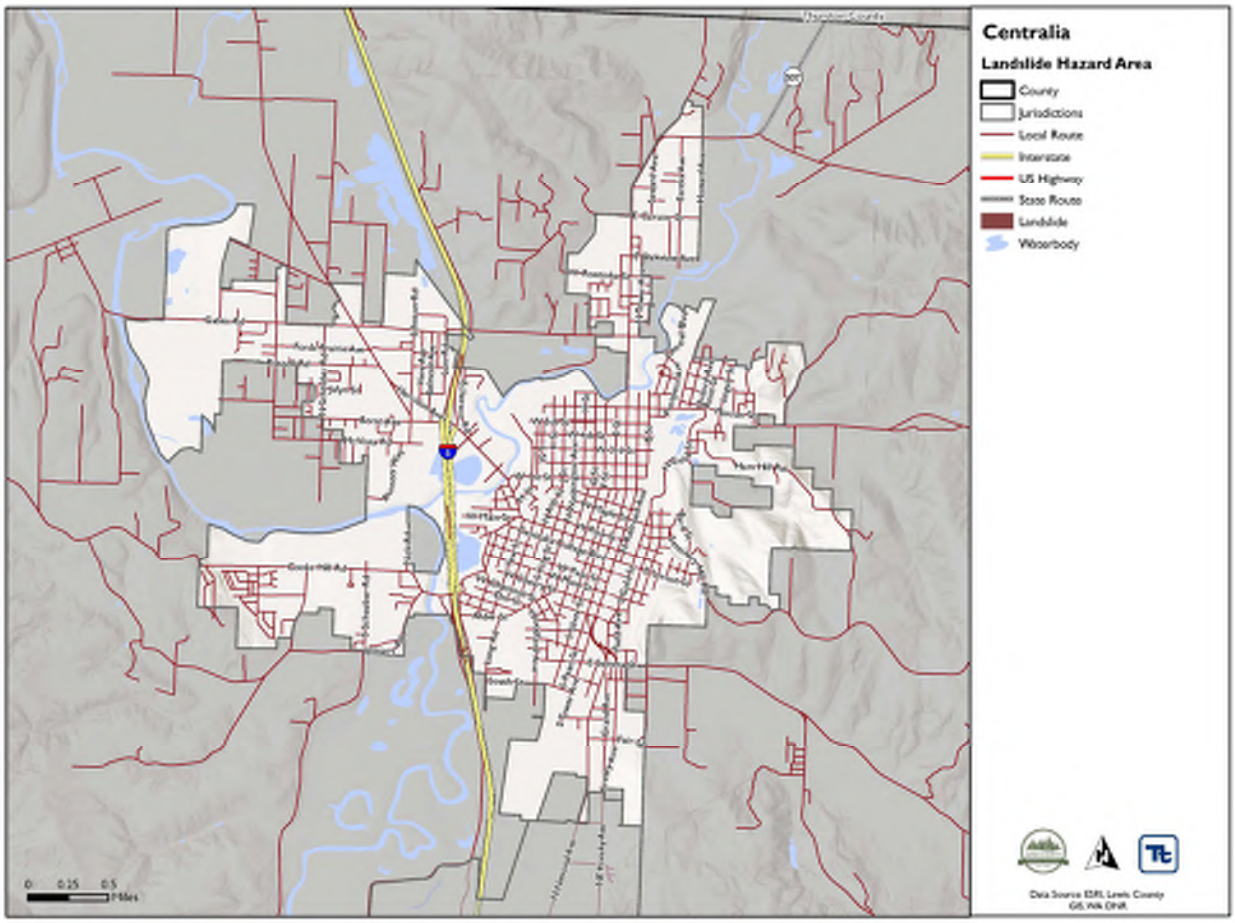

Centralia
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
0 0.25 0.5
Miles

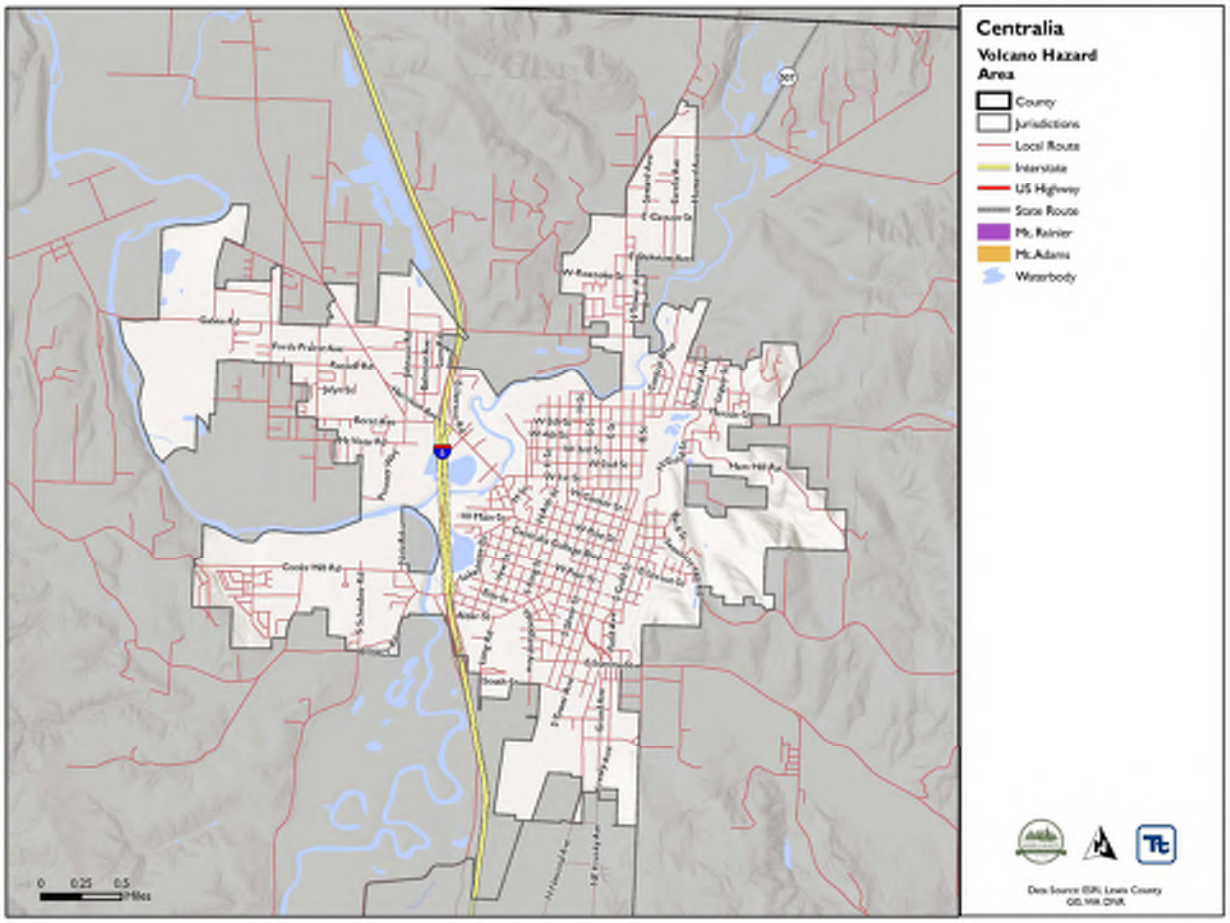

Centralia
Cascadia M9.34 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Centralia
Chehalis
0
0.5
Miles


Centralia
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0 0.25 0.5 Miles


Centralia
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
0 0.25 0.5
Miles


Centralia
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent Annual Chance Flood
0.2-Percent Annual Chance Flood
0 0.25 0.5
Miles


Centralia
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0 0.25 0.5
Miles
Data Source: ESRI, Lewis County GIS, WA DNR


Centralia
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0 0.25 0.5 Miles

4.0 CITY OF CHEHALIS

4.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Celest Wilder, CFM Engineer Technician III
City of Chehalis Public Works
2007 NE Kresky Ave
Chehalis, WA 98532
Telephone: 360-748-0238
e-mail Address: cwilder@ci.chehalis.wa.us

Alternate Point of Contact
Brandon Rakes, Airport Director
Chehalis- Centralia Regional Airport
900 NW Airport Way
Chehalis, WA 98532
Telephone: 360-748-1230
e-mail Address:
brakes@ci.chehalis.wa.us

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 4-1.

Table 4-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Celest Wilder	Engineer Technician III
Brandon Rakes	Airport Director

4.2 Jurisdiction Profile

4.2.1 Location and Features

The City of Chehalis is the second most populated city in Lewis County. The city straddles Interstate 5 at a point almost exactly halfway between Seattle, Washington and Portland, Oregon. The historic downtown and most of the city's amenities lie on the east side of the freeway, nestled at the base of a small range of forested hills. On the west side of the freeway are parks, farms, and a few subdivisions developed in the hills to the west. A small airport is located immediately west of the freeway towards the northern end of the city. The primary development on the west side of the interstate is a large commercial development featuring numerous big box stores, a strip mall and restaurants. From numerous vantage points in the hills just west of town, one can see Mount Rainier, Mount Adams, and Mount St. Helens—weather permitting.

According to the United States Census Bureau, the city has a total area of 5.6 square miles all of it land. The City of Chehalis is characterized by a broad floodplain and low terraces surrounded by upland valleys of low to moderate relief that have broad, rounded ridges. The Chehalis River winds its way through the valley in which the city resides, and is there joined by a tributary, the Newaukum River. Both rivers are prone to flooding during periods of abnormally heavy or persistent rain, and the lowlands from the freeway westward are particularly susceptible to inundation.

4.2.2 History

The City of Chehalis was incorporated on November 23, 1883, as a city under the territorial government. In 1890, Chehalis was incorporated under state government. In 1975 Chehalis voters adopted the city's present council/manager form of government.

4.2.3 Governing Body Format

The City of Chehalis operates under a council-manager governing format. Seven councilors select the mayor from among themselves. These seven councilors are the City's only elected officials. Together they develop the goals and policies necessary to establish the roles that the city should play, the services and programs it should provide, and the projects it should undertake in striving toward their vision of the community's future.

The City of Chehalis assumes responsibility for the adoption of this plan; Public Works will oversee its implementation.

4.3 Current Trends

4.3.1 Population

According to The United States Census Bureau, the population of The City of Chehalis as of April 1, 2020 was 7,439. Since 2010, the population has grown at an average annual rate of 0.24% percent.

4.3.2 Development

The City of Chehalis anticipates slow growth, below 2%. Historic development trends for residential construction have been primarily in the Urban Growth Areas south of the existing city limits and east of Jackson Highway. Some infill residential development has occurred within established neighborhoods. The type and age of housing stock varies throughout the city. The central and west-side neighborhoods were established in the 1920's to 1940's. The hillside and southern neighborhoods date from the 1940's. The 'Snively' area was developed through the 1950's and 1960's. A few subdivisions have been approved since the 1970's but large-scale residential development has not occurred since then.

Commercial development occurred around the central business district and expanded outward. Market Blvd. and Main Street have been the focus of the commercial district for many years. The construction of Interstate 5 in the 1950's generated significant commercial development near the three interchanges. Tourist oriented businesses continue to be developed in those locations today. In the 1990's, significant commercial development began west of the freeway around the Chehalis-Centralia airport. Future residential development will continue to occur south of the existing city limits in the vicinity of Jackson Highway. The Chehalis Urban Growth Area abuts the city of Napavine and their commercial areas at Exit 72. Commercial development will continue west of the freeway in the vicinity of the airport. Infill tourist oriented development will occur at all three of the existing freeway interchanges within the city limits, and also around the new interchange at LaBree Road in the southern Chehalis UGA. Redevelopment of existing, aged commercial buildings will continue in established commercial districts. Chehalis has adopted an economic development program called the Renaissance Project. Significant

interest has been shown in both redevelopment of the central business district and enhancement of the historic significance of all three Chehalis historic districts.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 4-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 4-2. Recent and Expected Future Development Trends.

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	No
Is your jurisdiction expected to annex any areas during the performance period of this plan?	Yes
If yes, describe land areas and dominant uses.	Areas in the Urban Growth Area to the south and east of current city limits are expected to be annexed. These areas mainly consist of either light and heavy industrial, or mixed density residential uses.
If yes, who currently has permitting authority over these areas?	Through an interlocal agreement with Lewis County, the City of Chehalis is the current permitting authority in the areas.
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas.*	Yes

How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?

	2017	2018	2019	2020	2021	2022
Single Family	1	14	17	17	47	14
Multi-Family	29	0	6	2	5	22
Other	12	13	11	7	14	13
Total	42	27	35	26	66	49

**Includes new construction development within the Chehalis Urban Growth Area.*

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.

- Special Flood Hazard Areas: 14
- Landslide: 0
- High Liquefaction Areas: 0
- Wildfire Risk Areas: 0

Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	The majority of development that has occurred since the preparation of the previous hazard mitigation plan has taken place primarily within the Chehalis Urban Growth Area. Buildable land inventory within city limits is minimal. For the most part, undeveloped parcels inside city limits are located along the eastern hillside where steep slopes, unimproved rights-of-way, and mandatory infrastructure extensions hinder development rates.

4.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 4-3.
- Development and permitting capabilities are presented in Table 4-4.
- An assessment of fiscal capabilities is presented in Table 4-5.
- An assessment of administrative and technical capabilities is presented in Table 4-6.
- An assessment of education and outreach capabilities is presented in Table 4-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 4-8.
- Classifications under various community mitigation programs are presented in Table 4-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 4-10.

Table 4-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	No	Yes	Yes
Comment: 2018 International Building Code, Adopted 2021				
Zoning Code	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code, Title 17, Division V. Land Use Zones and Division VI. Use Chart/Zoning Map Adopted 2009				
Subdivisions	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code, Chapter 17.12, Subdivisions, Adopted 2009				
Stormwater Management	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code. Chapter 15.30, Adopted 1992				
Post-Disaster Recovery	Yes	Yes	Yes	Yes
Comment: Chehalis River Basin Flood Control Zone District Comprehensive Flood Hazard Management Pan, Resolution No. 16-2021, November 2021				
Real Estate Disclosure	No	No	Yes	No
Comment:				
Growth Management	Yes	No	Yes	Yes
Comment: Ordinance 520-B, 1993				
Site Plan Review	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code, Chapter 17.09.130				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Environmental Protection	Yes	No	Yes	Yes
Comment: State Environmental Policy Act (SEPA) Ordinance 720-B, 2002				
Flood Damage Prevention	Yes	No	No	Yes
Comment: Chehalis River Basin CFHMP–Resolution 16-2021, Adopted 11-22-2021				
Emergency Management	Yes	Yes	Yes	Yes
Comment: 2016 Lewis County Comprehensive Emergency Management Plan				
Climate Change	Yes	Yes	Yes	Yes
Comment: Washington State Department of Ecology, Climate Change Strategy				
Other	No	No	No	No
Comment: Enter Comment				
Planning Documents				
Comprehensive Plan	Yes	No	Yes	Yes
Comment: City of Chehalis Comprehensive Plan, Ord. 645-B, 1999				
Capital Facilities Plan	Yes	No	Yes	Yes
How often is the plan updated? Every 8 years				
Comment: Located in Chapter 7 of the City of Chehalis Comprehensive Plan				
Disaster Debris Management Plan	No	Yes	No	Yes
Comment: Chehalis River Basin CFHMP- Resolution 16-2021, Adopted 11-22-2021				
Floodplain or Watershed Plan	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code, Chapter 17.22, Ord. 849B, 2009				
Stormwater Plan	Yes	No	Yes	Yes
Comment: Ord. 479-B, 1992				
Water System Plan	No	No	Yes	Yes
Comment: Department of Ecology Plan Number 12250-A				
Habitat Conservation Plan	Yes	No	Yes	Yes
Comment: Chehalis Municipal Code Chapter 17.25				
Economic Development Plan	Yes	No	No	Yes
Comment: Chehalis Municipal Code Chapter 2.35				
Shoreline Management Plan	Yes	No	Yes	Yes
Comment: Shoreline Master Program Resolution No. 19.81				
Community Wildfire Protection Plan	No	Yes	No	Yes
Comment: Lewis County Multi-Jurisdictional Hazard Mitigation Plan, 2016				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	No	Yes	Yes	Yes
Comment: Chehalis River Basin CFHMP- Resolution 16-2021, Adopted 11-22-2021				
Comprehensive Emergency Management Plan	Yes	Yes	Yes	Yes
Comment: Adopted 2009				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	Yes	No	Yes
Comment: Lewis County Multi-Jurisdictional Hazard Mitigation Plan, 2016				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Post-Disaster Recovery Plan	No	Yes	No	Yes
Comment: Lewis County Multi-Jurisdictional Hazard Mitigation Plan, 2016				
Continuity of Operations Plan	No	Yes	No	Yes
Comment: Lewis County Multi-Jurisdictional Hazard Mitigation Plan, 2016				
Public Health Plan	No	Yes	No	Yes
Comment: Lewis County Multi-Jurisdictional Hazard Mitigation Plan, 2016				
Other	No	No	No	No
Comment:				

Table 4-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If no, who does? If yes, which department? Community Development	
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	Yes, growth rates within city limits is estimated at less than 2% due to depleted buildable land inventory.

Table 4-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: Water and Sewer services within city limits are owned by the city	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	No
If yes, specify:	

Table 4-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Building and Planning Manager, City Planner, Building Inspector, Public Works Director, Public Works Engineer Technician	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Building Inspector, Public Works Engineer Technician	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Building and Planning Manager, Public Works Director, Engineer Technician	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Building and Planning Manager, Finance Director	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: Building and Planning Manager, Planner	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Fire Chief	
Grant writers	No
If yes, Department/Position:	
Other	No
If yes, Department/Position:	

Table 4-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website?	Yes
If yes, briefly describe: A link to the Comprehensive Flood Hazard Management Plan can be found on the City website	
Do you use social media for hazard mitigation education and outreach?	Yes
If yes, briefly describe: The Fire Department uses social media to share public safety, mitiation education, and outreach programs.	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
If yes, briefly describe: The Planning Commission addresses issues related to hazard mitigation when considering projects located within any Special Flood Hazard Area.	
Do you have any other programs in place that could be used to communicate hazard-related information?	No
If yes, briefly describe:	
Do you have any established warning systems for hazard events?	Yes
If yes, briefly describe: The City of Chehalis participates in countywide warning system programs.	

Table 4-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Building and Planning Department
Who is your floodplain administrator? (Department/Position)	Community Development Director or Designee
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* Ord. 958B	2016
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?* The City of Chehalis has adopted a zero-rise policy, and in construction practices requires a minimum of 1' freeboard above the base flood elevation.	Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	November, 2022
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes, what is the effective date?* July 17, 2006	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* Yes *If no, is your jurisdiction interested in joining the CRS program?*	Yes
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* $60,549,000 *What is the premium in force?* $248,517	184
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?* $30,605,965	542
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance *Permit valuations are levied against assessed value as established by the Lewis County Tax Assessor's Office. If the value of the improvement is greater than or equal to 50% of the assessed value or assessed damage, then substantial improvement/damage provisions are enforced.*	

a. According to FEMA statistics as of January 18, 2024

Table 4-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes	5311475	N/A
UEI#	Yes	UNLEVUQQ6FJ5	04-17-2009
Community Rating System	Yes	Class 6	November, 2022
Building Code Effectiveness Grading Schedule	Yes	Class 4	November, 2022
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 4-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negatively impacted *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

4.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

4.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Chehalis River Basin Comprehensive Flood Hazard Management Plan –** The plans evaluate risk using the same data, the actions plans are consistent.
- **Lewis County Multi-Jurisdictional Hazard Mitigation Plan**

4.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Comprehensive Plan -** Climate change resiliency element.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

4.6 Risk Assessment

4.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 4-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 4-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	Still in process
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$269,224,47
Flooding and Mudslides	4635	11/13-11/15/2021	None
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	None
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$43,453.61
Biological, COVID-19	4481	1/20/2020-9/11/2023	None
Biological, COVID-19	3427	1/20/2020-9/1/2023	None
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	None
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	None
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	None
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$716,448.94
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	None
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$13,114.50

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$128,876.58
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$716,448.94
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	None
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$43,047.64
Earthquake	1361	2/28-3/16/2001	$43,031.41
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	Not Available
Severe Storms, Flooding	1100	1/26-2/23/1996	Not Available
Storms, High Winds, Floods	1079	11/7-12/18/1995	Not Available
Severe Storm, High Winds	981	1/20-1/21/1993	Not Available
High Tides, Severe Storm	896	12/20-12/31/1990	Not Available
Flooding, Severe Storm	883	11/9-12/20/1990	Not Available
Flooding, Severe Storm	852	1/6-1/14/1990	Not Available
Severe Storms, Flooding	784	11/22-11/29/1986	Not Available
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Not Available
Severe Storms, Mudslides, Flooding	545	12/10/1977	Not Available
Severe Storms, Flooding	492	12/13/1975	Not Available
Severe Storms, Snowmelt, Flooding	414	1/25/1974	Not Available
Severe Storms, Flooding	322	2/01/1972	Not Available
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	Not Available
Heavy Rains and Flooding	185	12/29/1964	Not Available

4.6.2 Hazard Risk Ranking

Table 4-12 and Table 4-13 present a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 4-12. Hazard Risk Ranking – City Limits.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	39	High
2	Earthquake	36	High
3	Severe Weather	18	Medium
4	Dam Failure	16	Medium
5	Avalanche	12	Low
6	Wildfire	0	Low
7	Landslide	0	Low
8	Volcano	0	Low

Table 4-13. Hazard Risk Ranking – UGA.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	34	High
2	Severe Weather	18	Medium
3	Landslide	18	Medium
4	Flood	18	Medium
5	Dam Failure	0	Low
6	Avalanche	0	Low
7	Wildfire	0	Low
8	Volcano	0	Low

4.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 65
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 11
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 16

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

4.7 Status of Previous Plan Actions

Table 4-14 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 4-14. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue contract with Lewis County to provide statutory emergency services. *Comment:* Ongoing	X			
Operate incident command post during event. *Comment:* Ongoing			X	CHE-7
Continue annual bridge inspections. *Comment:* Ongoing			X	CHE-8
Continue update of critical areas ordinance. *Comment:* Ongoing as needed.			X	CHE-9
Adopt new earthquake hazard maps (when available from DNR). *Comment:* New earthquake hazard maps will be adopted when made available from DNR.			X	CHE-10
Maintain mapping of critical areas for public information. *Comment:* Ongoing.			X	CHE-11
Continue using "Statement of Restrictions" form for notice to public. *Comment:* Ongoing.			X	CHE-12
Continue requiring engineered foundations in critical slope or vicinity of fault line areas. *Comment:* Ongoing.			X	CHE-13
Continue using SEPA authority to mitigate identified hazards. *Comment:* Ongoing.			X	CHE-14
Continue annual fire inspections of existing business occupancies. *Comment:* Ongoing.			X	CHE-15
Continue participation in the Community Rating System (CRS) program. *Comment:* Ongoing.			X	CHE-16
Continue participation in the Chehalis River Basin Flood Authority (the Flood Authority.) *Comment:* Ongoing.			X	CHE-17
Continue applications for Hazard Mitigation Grant funding when available for vent retrofitting, home elevation, home buyout, and other similar type mitigation projects. *Comment:* Ongoing- when needed.			X	CHE-18
Continue annual levee inspection/maintenance. *Comment:* Ongoing.			X	CHE-19
Continue requirements for undergrounding utilities in new subdivision. *Comment:* Ongoing.			X	CHE-20
Relocate fire station (first responders). *Comment:* This action has been completed.	X			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue updates to utility plans (water, wastewater and stormwater systems). *Comment:* Ongoing.			X	CHE-21
Obtain seismic analysis for water reservoir *Comment:* This action has been completed.	X			
Replace Chamber Way Bridge. *Comment:* Ongoing.			X	CHE-22

4.8 Hazard Mitigation Action Plan

Table 4-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 14-16 identifies the priority for each action

Table 4-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CHE-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Flood					
Existing	1, 5	City of Chehalis Community Development	Office of the Chehalis Basin	High	HMGP, BRIC, FMA, CFAR	Short-term
Action CHE-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community.						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
New and Existing	2, 3, 4	City of Chehalis Community Development		Low	Staff Time, General Funds	Short-term
Action CHE-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
New and Existing	1, 2, 3, 4, 5, 6	Lewis County Community Development	City of Chehalis	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CHE-4—Continue to participate in CRS (Community Rating System) by maintaining good standing and compliance under the NFIP through implementation of floodplain management programs that meet or exceed NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Flood					
New and Existing	1, 2, 3	City of Chehalis Community Development		Low	Staff Time, General Funds	Short-term
Action CHE-5—Identify and pursue strategies to increase adaptive capacity to climate change, including but not limited to the following: • Habitat Preservation • Maintain/Restore Wetlands • Preserve Riverine Land and Development • Green Infrastructure Strategy Implementation • Stormwater Management Logistics						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
New and Existing	1, 2	City of Chehalis Community Development	Lewis County, Washington State Department of Ecology	Low	Staff Time, General Funds	Medium-term
Action CHE-6—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
Existing	6	City of Chehalis Public Works		Low	Staff Time, General Funds	Medium-term
Action CHE-7—Operate Incident Command Post During Event						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
Existing	4, 6	City of Chehalis Emergency Manager	Lewis County City of Centralia	Medium	Staff Time, General Fund	Short-term
Action CHE-8—Continue Annual Bridge Inspections						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
Existing	4, 5, 6	City of Chehalis Public Works		Low	General Fund	Short-term

Action CHE-9—Continue Update of Critical Areas Ordinance						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Dam Failure, Landslide, Volcano					
New and Existing	2	City of Chehalis Community Development	Lewis County	Low	Staff Time, General Fund	Short-term
Action CHE-10—Adopt New Earthquake Hazard Maps (when available from DNR)						
Hazards Mitigated:	Earthquake					
New and Existing	2	City of Chehalis Community Development		Low	Staff Time, General Fund	Short-term
Action CHE-11—Maintain Mapping of Critical Areas for Public Information						
Hazards Mitigated:	Flood, Fire, Earthquake, Landslide, Volcano					
New and Existing	3	Lewis County GIS	City of Chehalis	Low	Staff Time, General Fund	Short-term
Action CHE-12—Continue Using "Statement of Restrictions" forms for notice to public						
Hazards Mitigated:	Flood					
New	2,3	City of Chehalis Community Development		Low	Staff Time, General Fund	Short-term
Action CHE-13- Continue Requiring Engineered Foundations in Critical Slope or Vicinity of Fault Line Areas						
Hazards Mitigated:	Earthquake. Landslide					
New	1, 2	City of Chehalis Community Development		Low	Staff Time, General Fund	Short-term
Action CHE-14—Continue using SEPA authority to mitigate identified hazards						
Hazards Mitigated:	Flood, Fire, Earthquake, Landslide					
New and Existing	1, 2	City of Chehalis Community Development		Low	Staff Time, General Fund	Short-term
Action CHE-15—Continue Annual Fire Inspections of Existing Business Occupancies						
Hazards Mitigated:	Fire					
Existing	1, 2, 3	City of Chehalis Fire Department		Low	Staff Time, General Fund	Short-term
Action CHE-16—Continue Participation in the Chehalis River Basing Flood Authority (The Flood Authority)						
Hazards Mitigated:	Flood					
New and Existing	2, 3	City of Chehalis Community Development	Office of the Chehalis Basin, Lewis County	Low	Staff Time, General Fund	Short-term

Action CHE-17—Continue applications for hazard mitigation grant funding when available for vent retrofitting, home elevation, home buyout, and other similar type mitigation projects						
Hazards Mitigated:	Flood					
Existing	1, 4, 5	City of Chehalis Community Development	Public Works	Low	Staff Time, General Fund, FEMA grants	Short-term
Action CHE-18—Continue Annual Levee Inspection/Maintenance						
Hazards Mitigated:	Flood					
Existing	1	City of Chehalis Public Works		Low	Staff Time, Airport Fund	Short-term
Action CHE-19— Continue requirements for undergrounding utilities in new subdivisions						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Landslide					
New	1, 2	City of Chehalis Public Works	Community Development	Low	Staff Time, General Fund	Short-term
Action CHE-20— Continue Updates to Utility Plans (Water, Wastewater, Stormwater Systems)						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Landslide, Volcano					
New and Existing	6	City of Chehalis Public Works		Medium	Staff Time, General Fund, Water Fund, Wastewater Fund	Medium-term
Action CHE-21— Replace Chamber Way Bridge						
Hazards Mitigated:	Flood, Fire, Earthquake, Severe Weather, Landslide, Volcano					
Existing	6	City of Chehalis Public Works	BNSF, EDC	High	Staff time, General Fund, Local Program Grants, Federal Grants	Long-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe.

Acronyms used here are defined at the beginning of this volume.

Table 4-16. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	1, 5	Medium	High	No	Yes	No	Low	Low
2	2, 3, 4	Medium	Low	Yes	Yes	Yes	High	Low
3	1, 2, 3, 4, 5, 6	Medium	Low	Yes	No	Yes	High	Medium
4	1, 2, 3	Medium	Low	Yes	No	Yes	Medium	Medium
5	1, 2	Low	High	No	No	No	Medium	Low

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
6	6	Medium	Medium	Yes	Yes	No	Low	Medium
7	4, 6	High	Low	Yes	No	Yes	High	Low
8	4, 5, 6	Medium	Low	Yes	No	Yes	High	Low
9	2	Medium	Medium	Yes	No	Yes	High	Low
10	2	Medium	Low	Yes	No	Yes	High	Low
11	3	Medium	Low	Yes	No	Yes	High	Low
12	2, 3	High	Low	Yes	No	Yes	High	Low
13	1, 2	High	Low	Yes	No	Yes	High	Low
14	1, 2	Medium	Low	Yes	No	Yes	High	Low
15	1, 2, 3	Medium	Low	Yes	No	Yes	High	Low
16	2, 3	Medium	Low	Yes	No	Yes	High	Low
17	1, 4, 5	Medium	Low	Yes	Yes	Yes	High	Medium
18	1	Medium	Low	Yes	No	Yes	High	Low
19	1, 2	Medium	Low	Yes	No	Yes	High	Low
20	6	Medium	Low	Yes	No	Yes	High	Low
21	6	Medium	High	No	Yes	No	Medium	Medium

4.9 Information Sources Used for This Annex

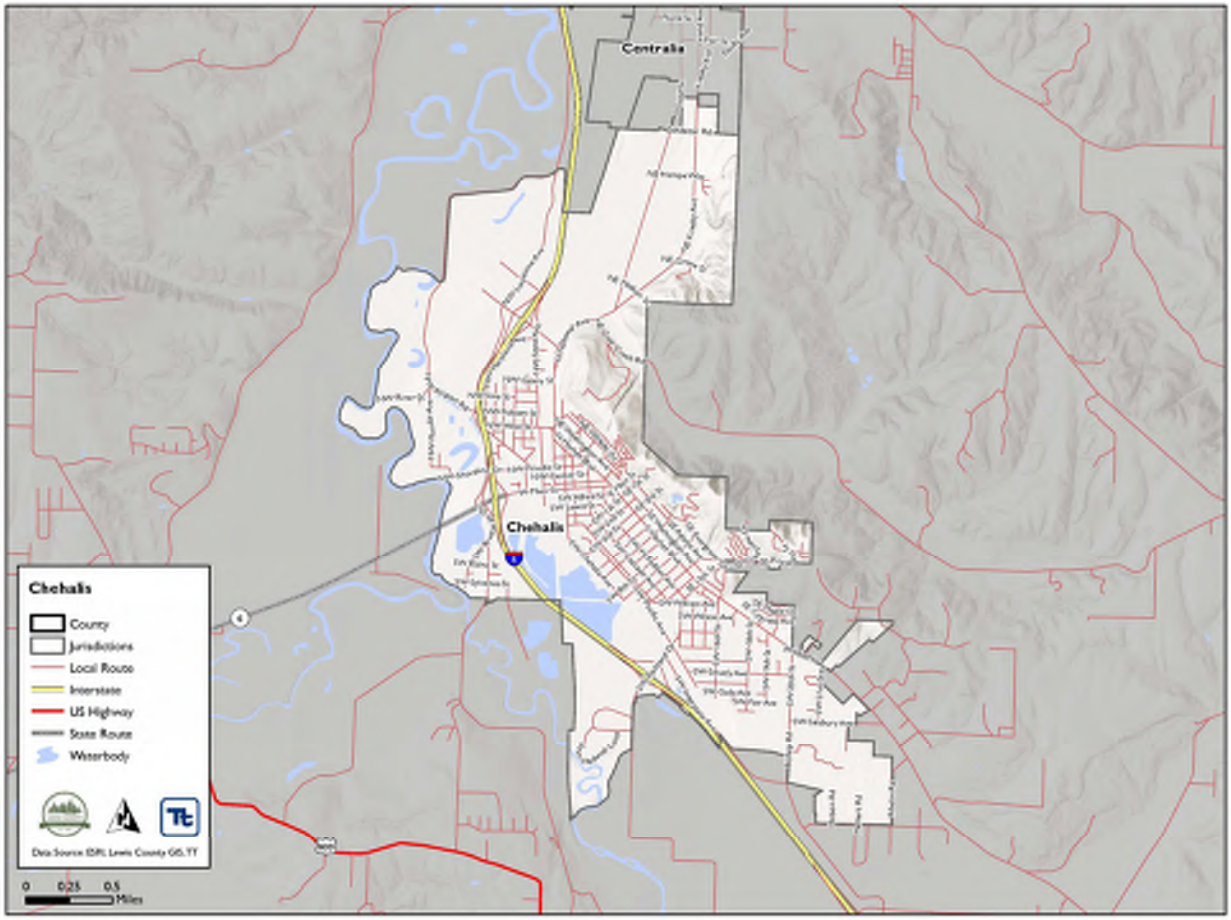
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

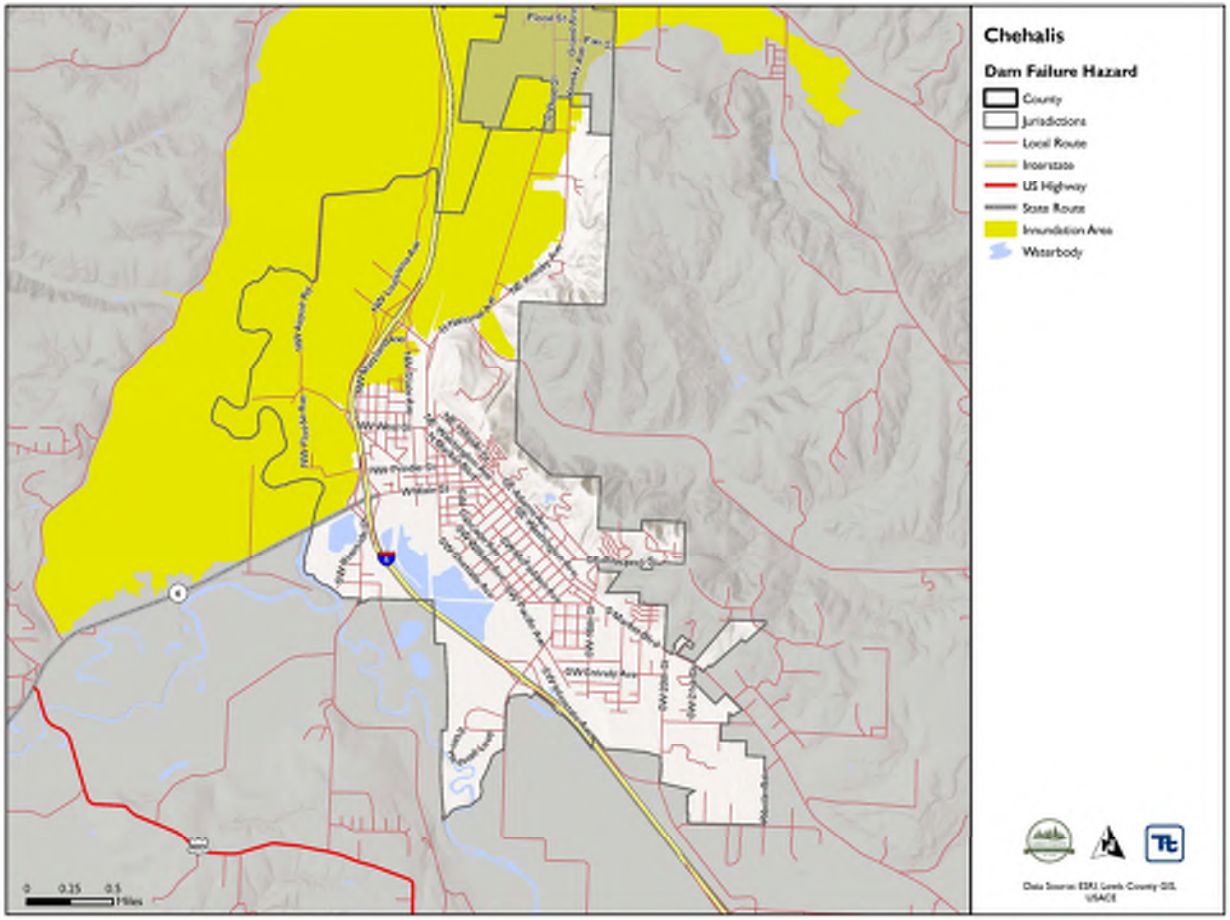
- **Chehalis Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Chehalis Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Chehalis Critical Areas Ordinance** – The critical areas ordinance was utilized for supplemental information contained in this annex.
- **City of Chehalis Comprehensive Plan** – The Comp Plan was utilized for supplemental information contained in this annex.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

4.10 Hazard Maps


Centralia
Chehalis
Chehalis
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
0 0.25 0.5
Miles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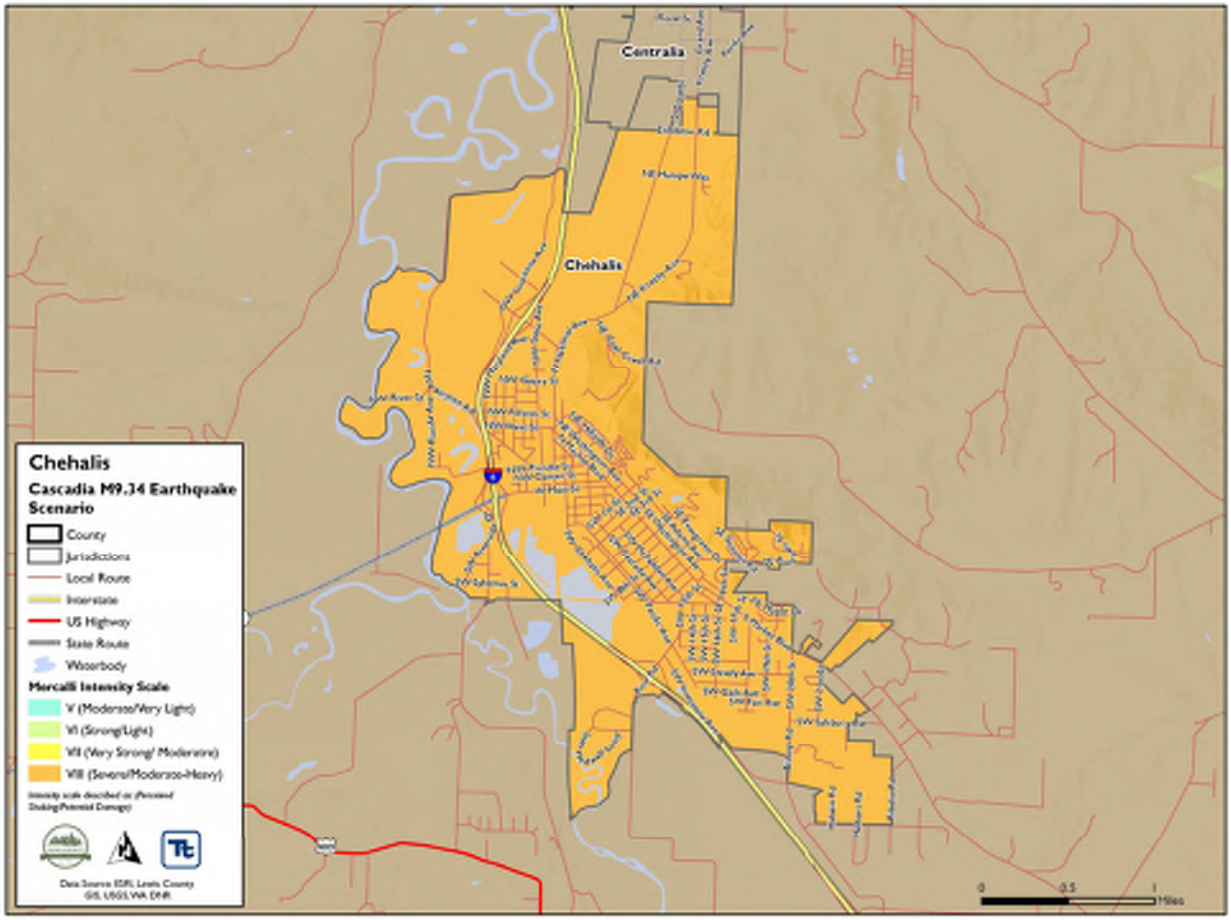
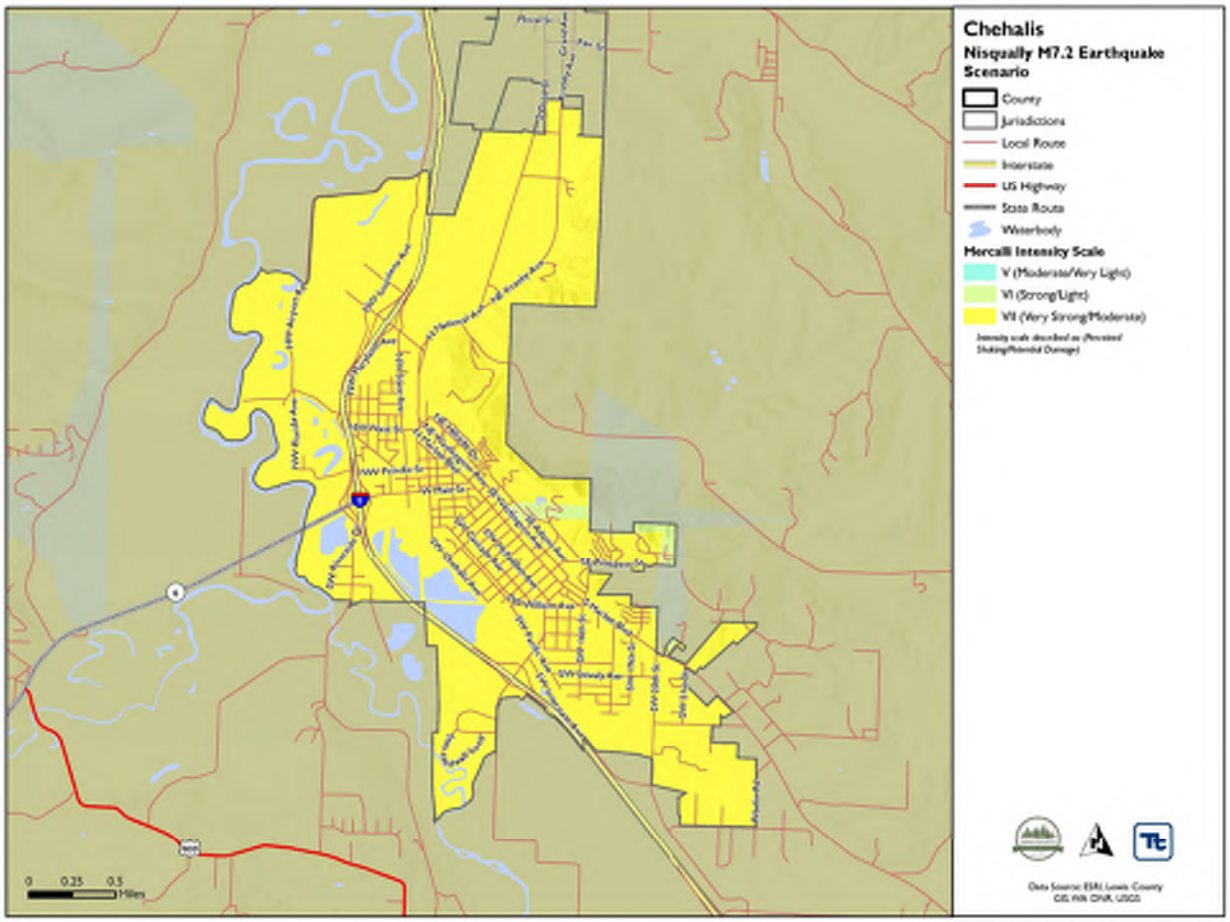
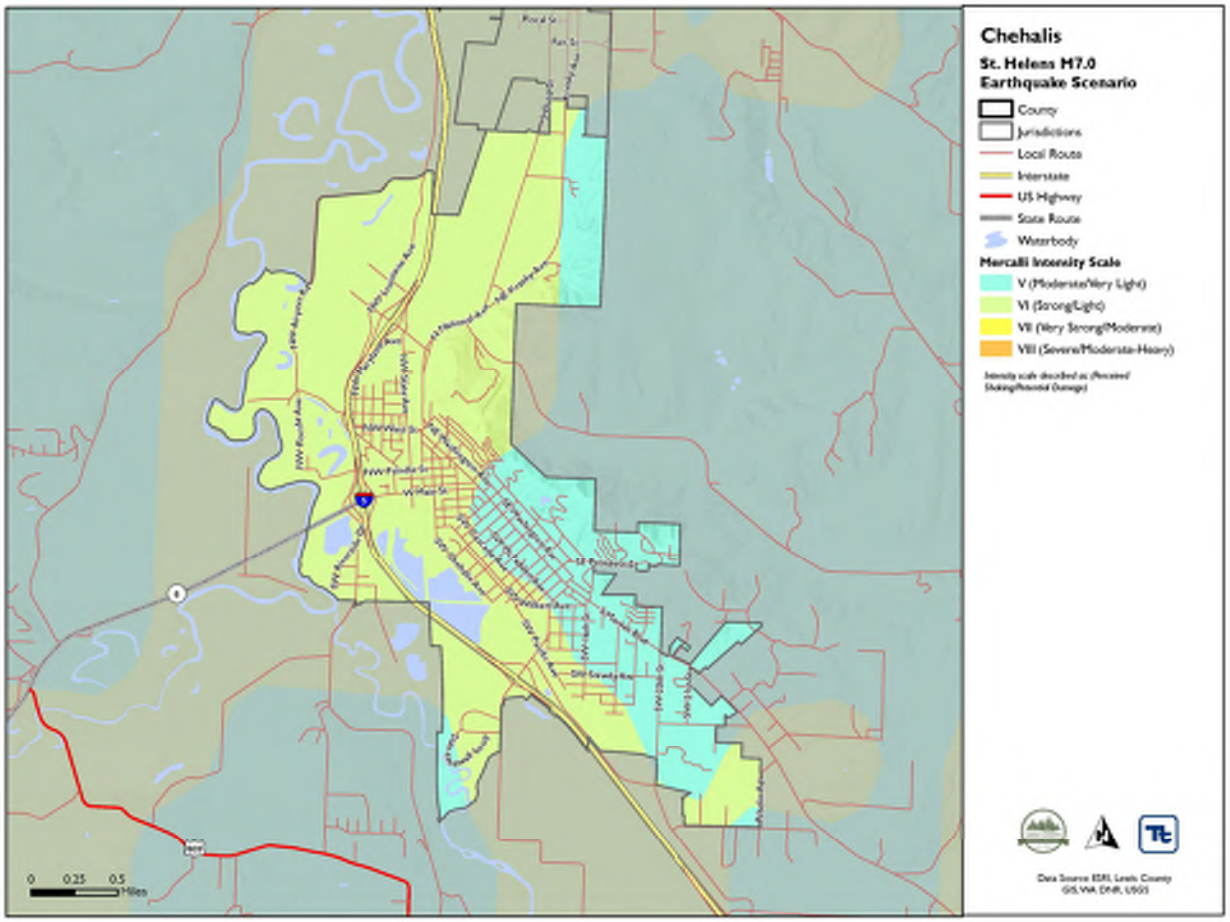
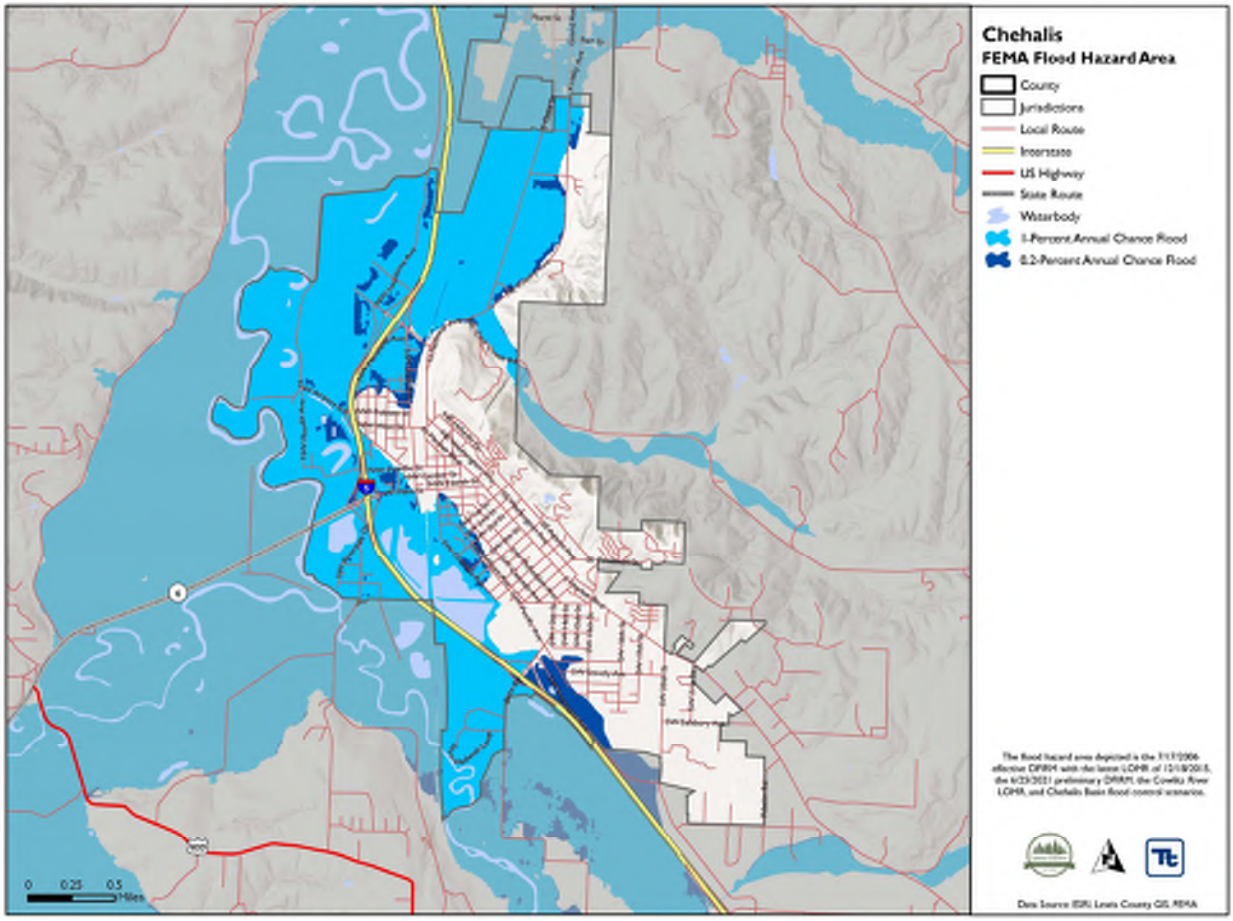
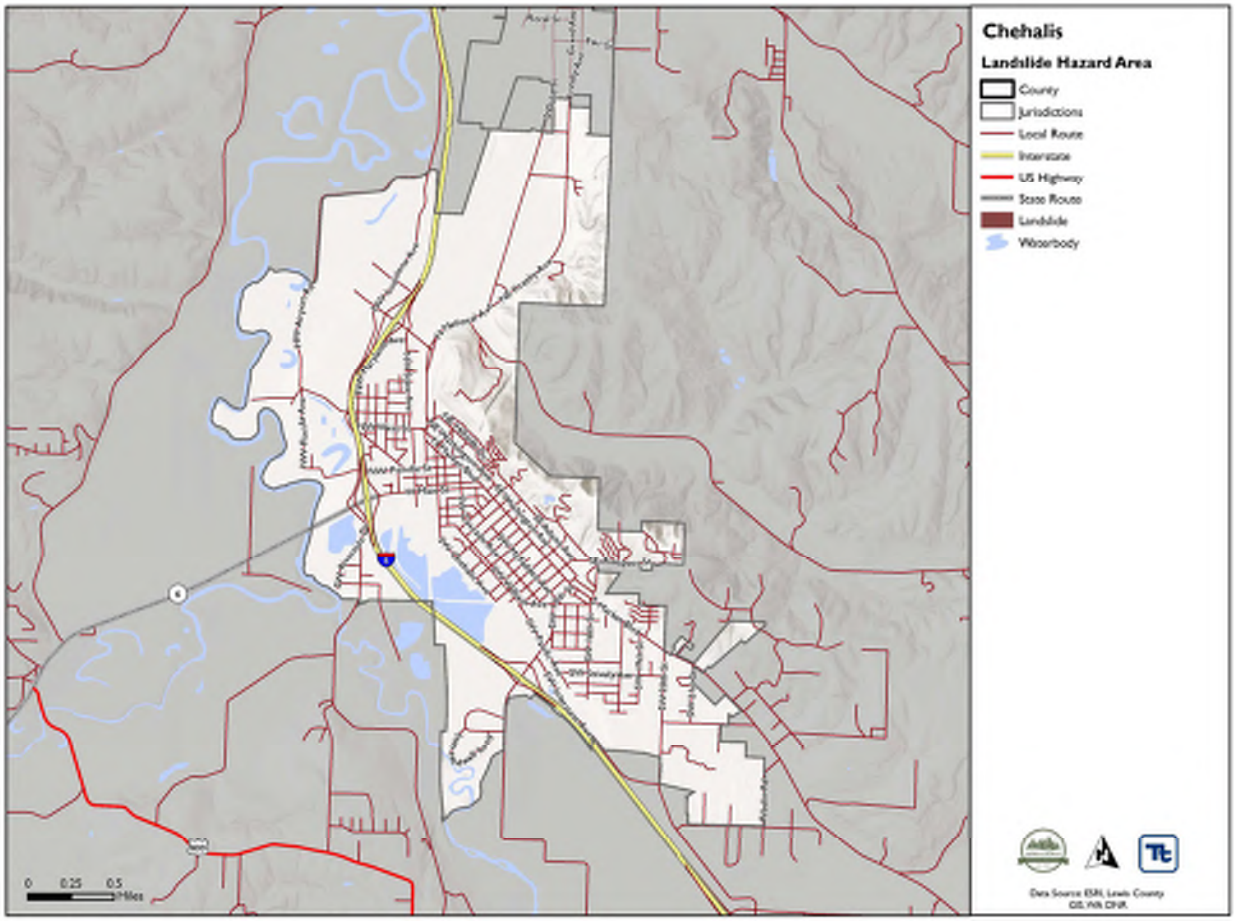
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
0 0.25 0.5
Miles

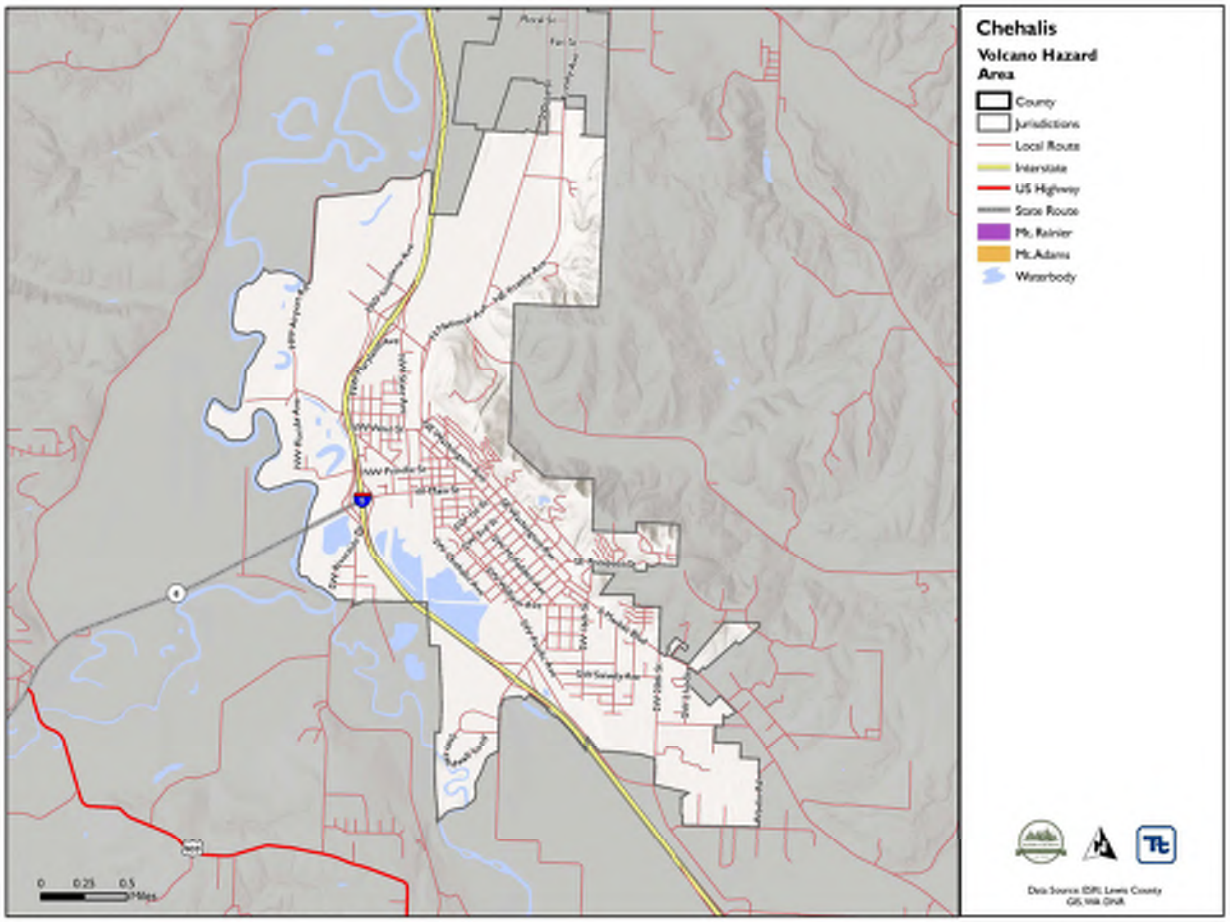

Centralia
Chehalis
Chehalis
Cascadia M9.34 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
0
0.5
1
Miles


Chehalis
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0 0.25 0.5 Miles


Chehalis
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
0 0.25 0.5
Miles


Chehalis
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent-Annual-Chance Flood
0.2-Percent-Annual-Chance Flood
0 0.25 0.5
Miles


Chehalis
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0 0.25 0.5 Miles


Chehalis
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0 0.25 0.5 Miles

5.0 CITY OF MORTON

5.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Anders Pollman , Public Works Superintendent
PO Box 1089
Morton, WA 98356
Telephone: 360-496-5210
e-mail Address: dpowell@visitmorton.com

Alternate Point of Contact
Dan Mortensen, Mayor
PO Box 1089
Morton, WA 98356
e-mail address:Mayor@visitmorton.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 5-1.

Table 5-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Dan Mortensen	Mayor
Anders Pollman	Public Works Superintendent
LuAnn Ward	City Clerk

5.2 Jurisdiction Profile

5.2.1 Location and Features

Morton is located 31 miles west of Interstate 5 on U.S. 12. Washington state routes 508 and 7 join with U.S. 12 in According to the United States Census Bureau, the city has a total area of 1.0 square miles, all of it land. Morton is nestled in a valley between Mt. Rainier National Park and Mt. St. Helens National Volcanic Monument at the junction of Washington SR 7 (National Park Highway) and US Highway 12, a Washington Scenic byway.

The Tilton River winds its way through the valley in which the city resides, and is there joined by tributaries, Lake Creek and Highland Creek. The City is prone to flooding during periods of abnormally heavy or persistent rain, and the lowlands from the freeway westward are particularly susceptible to inundation. Bellicum Peak, Bergen Mountain, Johnson Mountain and Cottlers Rock are major land features that surround Morton.

5.2.2 History

Morton was incorporated in January 7, 1913. Historic sources of revenue, included logging harvesting of cascara bark, and mining of cinnabar in local mines. Morton was once known as the, " tie capital of the world."

5.2.3 Governing Body Format

The governing body of the City of Morton consistent of the Morton City Council and the Mayor.

The Morton City Council assumes responsibility for the adoption of this plan; the City Council will oversee its implementation.

5.3 Current Trends

5.3.1 Population

According to US Census 2020, the population of Morton, Washington, as of 2020 was 1,111. Since 2022, the population has grown at an average annual rate of .88 percent.

5.3.2 Development

The City of Morton anticipates that slow growth (under 2%) to no growth will continue into the future. The existing City of Morton limits contain 486 acres. The City provides a base of operation for services critical to Eastern Lewis County, supporting the Morton Elementary School, Junior High, and High School, Centralia College East, County Center, and Employment Security. The community is mostly residential with 262 households. Morton contains a commercial business district consisting of Main Street and State Route 7.

Tourism is a growing industry in Morton with a number of new restaurants along US 12. Recent residential growth has taken place along SR 508 north and west of the city. Of current vacant industrial lands, only two parcels were large enough to serve as anything more than as cottage industry. Likewise, 36 acres of land designated vacant commercial has had improvements.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 5-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 5-2. Recent and Expected Future Development Trends.

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	No
Is your jurisdiction expected to annex any areas during the performance period of this plan?	Yes
If yes, describe land areas and dominant uses.	The City has several areas they are interested in annexing. About half of which is residential in zoning and the other is industrial/commercial, in zoning.
If yes, who currently has permitting authority over these areas?	Most of the area is in the current UGA and is permitted by the City and Lewis County.
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas.*	No

Criterion		Response					
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan? *Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.*	**Single Family**	4	5	5	14	11	2
	Multi-Family	0	0	0	0	0	1
	Other	0	0	0	0	0	0
	Total	4	5	5	14	11	3
	• Special Flood Hazard Areas: NA • Landslide: NA • High Liquefaction Areas: NA • Wildfire Risk Areas: NA						
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	We have no such inventory as the City does have the UGA boundaries, that provide a buildable base for both residential and commercial inventory.						

5.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in
-
- Table 5-3.
- Development and permitting capabilities are presented in Table 5-4.
- An assessment of fiscal capabilities is presented in Table 5-5.
- An assessment of administrative and technical capabilities is presented in Table 5-6.
- An assessment of education and outreach capabilities is presented in Table 5-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in
- Table **5-8**.
- Classifications under various community mitigation programs are presented in Table 5-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 5-10.

Table 5-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	Yes	No	Yes
Comment: County and City share in building code recognition				
Zoning Code	Yes	Yes	Yes	Yes
Comment:				
Subdivisions	Yes	Yes	Yes	Yes
Comment: State is currently mandating housing allocations and requirements				
Stormwater Management	Yes	Yes	Yes	Yes
Comment:				
Post-Disaster Recovery	Yes	Yes	Yes	Yes
Comment:				
Real Estate Disclosure	Yes	No	No	Yes
Comment:				
Growth Management	Yes	Yes	Yes	Yes
Comment:				
Site Plan Review	Yes	Yes	Yes	Yes
Comment:				
Environmental Protection	Yes	Yes	Yes	Yes
Comment:				
Flood Damage Prevention	Yes	Yes	Yes	Yes
Comment:				
Emergency Management	Yes	Yes	Yes	Yes
Comment:				
Climate Change	No	no	No	No
Comment: Does not apply as no one can affect climate change				
Other				
Comment:				
Planning Documents				
Comprehensive Plan	Yes	Yes	Yes	Yes
Comment:				
Capital Facilities Plan	Yes	Yes	Yes	Yes
How often is the plan updated? Currently updated and will be updated again in 2025				
Comment:				
Disaster Debris Management Plan	No	Yes	No	No
Comment:				
Floodplain or Watershed Plan	No	No	No	No
Comment:				
Stormwater Plan	Yes	Yes	No	Yes
Comment: Storm water plan is evaluated during construction and/or infrastructure planning				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Water System Plan	Yes	Yes	Yes	Yes
Comment: Water system plan is maintained per infrastructure and upgrades through ecology and requirements				
Habitat Conservation Plan	No	No	No	No
Comment:				
Economic Development Plan	No	No	No	No
Comment:				
Shoreline Management Plan	Yes	Yes	No	Yes
Comment: Shoreline Management Master Program				
Community Wildfire Protection Plan	Yes	Yes	Yes	No
Comment:				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	No	No	No	No
Comment:				
Comprehensive Emergency Management Plan	Yes	No	No	No
Comment: Adopted 1999				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	No	No	No
Comment:				
Post-Disaster Recovery Plan	No	No	No	No
Comment:				
Continuity of Operations Plan	No	No	No	No
Comment:				
Public Health Plan	No	No	No	No
Comment:				
Other				
Comment:				

Table 5-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	No
If no, who does? If yes, which department? Cooperative with the county	
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	Yes

Table 5-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service *If yes, specify:* User rate fees for water/sewer	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Don't know
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 5-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:* G & O engineering	Yes
Engineers or professionals trained in building or infrastructure construction practices *If yes, Department/Position:* G & O Engineering	Yes
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:* G & O Engineering	Yes
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:*	No
Grant writers *If yes, Department/Position:*	No

Table 5-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Currently do not, but could if needed	No

Criterion	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Social media and Central dispatch	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Code red from Lewis County Dispatch	Yes

Table 5-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Public works
Who is your floodplain administrator? (Department/Position)	None
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* 2023-01	Critical Areas Ordinance amended in 2023
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes what is the effective date.* January 2023	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?* Our flood plain maps are from state and county	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?* No	No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* $250,000 *What is the premium in force?* $3,482	1

Criterion	Response
How many total loss claims have been filed in your jurisdiction?[a]	1
What were the total payments for losses? $0	
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance	
After an event, the Floodplain Administrator will assemble a team of inspectors to perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. If the event was flooding, this team would have also conducted a windshield survey during the flood event to document structures affected by flooding. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations.	

a. According to FEMA statistics as of January 18, 2024

Table 5-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No		N/A
DUNS #	No		N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No		N/A
Public Protection	No		N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 5-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment: If any, through G&O Engineering	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Medium
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

5.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

5.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Morton Comprehensive Plan-**helps identify the current and future growth and needs of the city.

- **Zoning restrictions within the Ordinance-** identify areas with restrictions, be it from natural disasters or other restrictions.
- **Lewis County Comprehensive Emergency Management Plan-** guides the county, and associated cities, actions before, during, and after a disaster.
- **Lewis County Growth Management Planning-** explains the future needs of the city.

5.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Washington State Department of Transportation planning-** with major State Routes running through Morton, it would be important to be aware and be incorporated in any planning areas for these major thoroughfares.
- **Lewis County Public Utilities Department planning-** LC PUD is the major contributor to public utilities for the city. Being aware of planning areas would be important for the growth of the City.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

5.6 Risk Assessment

5.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 5-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 5-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

5.6.2 Hazard Risk Ranking

Table 5-12 and Table 5-13 present a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 5-12. Hazard Risk Ranking – City Limits.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	18	Medium
2	Earthquake	34	High
3	Wildfire	30	Medium
4	Severe Weather	18	Medium
5	Avalanche	0	Low
6	Dam Failure	0	Low
7	Landslide	0	Low
8	Volcano	0	Low

Table 5-13. Hazard Risk Ranking – UGA.

Rank	Hazard	Risk Ranking Score	Risk Category
2	Earthquake	34	High
	Flood	18	Medium
3	Wildfire	30	Medium
4	Severe Weather	18	Medium
5	Avalanche	0	Low
6	Dam Failure	0	Low
7	Landslide	0	Low
8	Volcano	0	Low

5.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

5.7 Status of Previous Plan Actions

Table **5-14** summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 5-14. Status of Previous Plans Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue to enforce the flood ordinance and update as needed.	X			
Comment: The City continues to enforce any flood ordinances and updates those plans as necessary.				

Train Planning Commission, Elected Officials, and staff when sessions are available	X		
Comment: Training of planning and elected officials is carried out on a regular basis as needed.			
Make information available to the public.	X		
Comment: Public reader boards and website as well as a Facebook site is updated and information is made available to the citizens, as information becomes available and necessary.			
Contract with Lewis County for emergency services	X		
Comment: The City of Morton works very closely with Lewis County emergency services.			
Update Radio Communications		X	MOR-9
Comment: Radio communications is always being updated in cooperation with Lewis County Dispatch Services.			
Operate Incident Command Post in time of emergency.	X		
Comment: Morton ICS is a cooperative effort between the Lewis County Agencies, and as such cooperative training is part of that plan.			
Continuing Education	X		
Comment: Centralia East College is located within the City of Morton and as such, provides a foundation for continued education, in east Lewis County.			
Continue coordination with Lewis County for managing development in UGAs to address critical areas concerns.	X		
Comment: Planning and coordination of Critical UGAs of our area is a constant effort between the City of Morton and Lewis County.			
Maintain map of critical and hazard areas in City Hall.		X	MOR-2
Comment: Records of UGAs and critical areas and hazard areas are being maintained and updated with record retention at Morton City Hall.			
Continuing education for Planning Commission	X		
Comment: Our current planning commission is in its infancy and as such, current training with additional membership is currently underway.			
Continue to require water & sewer locates for new developments, new construction and other utility pole or underground placement.	X		
Comment: Requests for utility locates is a daily task for our public works department as well as local PUD and communications venders.			
Continue inspections of manholes and storm drain facilities.	X		
Comment: The City Pubic Works Dept., is performing standard inspections as well as responding to request/notifications of manholes and storm drain infrastructure.			
Continue routine maintenance & repairs/replacement of backup generators & inspections of water reservoirs.	X		
Comment: Backup generators are routinely services and/or replaced as necessary to maintain the quality of services and infrastructure support required to sustain quality water and city services. Water reservoirs are regularly inspected and evaluated for performance and structural integrity.			
Keep ditches clean and infringing trees removed from Water and Wastewater treatment plants, reservoirs and water intake.	X		
Comment: Brand new Waste Water Treatment facility under current construction, to include surrounding boundaries.			
Routinely do structural assessments of all critical utility facilities	X		
Comment: General maintenance and/or repair of all of the public works infrastructure is performed on a regular basis.			
Continue using SEPA authority to ensure large projects provide for hazard mitigation.	X		

Comment: Sepa is a regular requirement of all projects conducted and/or undertaken by the City, if required for the appropriate funding.			
Continue following guidelines in Morton's Zoning & Development Regulations.		X	
Comment: All permitting is subject to the proper zoning and developmental regulations of the City and County.			
WWTP: Inspection to evaluate structural integrity to withstand earthquake, ash and snow loading on roof.		X	
Comment: All building and facility structures are routinely inspected for structural integrity and sustainability.			
WWTP: Culvert cleanout, storm drain and outfall line inspection as protection from flooding.	X		
Comment: Storm and flood preparation is a regular and routine process to maintain proper flow and drainage of storm water and runoff of the community, to prevent unnecessary flooding.			
WWTP: Replacement of backup generator.	X		
Comment: Generators are serviced and updated as needed. WWTF just has two new generators installed with the new treatment facility.			
Fire Department: Inspections to evaluate structural integrity to withstand earthquake and snow/ash loading on roof.	X		
Comment: FPD inspects commercial building to insure proper integrity and structural snow load capability.			
Fire Department: Routine maintenance on backup generator.	X		
Comment: FPD maintains the proper facility for backup generator(s), as needed by the FPD.			
Fire Department: Dependable Water supply	X		
Comment: The City provides a full service of water to and for the fire department to insure they have sufficient water supply for fire prevention and support.			
City Hall & Police Station: Purchase of backup power supply		X	MOR-5
Comment: The City Hall and Police Department are stand alone entities in separate locations and as such do not have supportive power supplies.			
Police Station: Upgrade radio communications, training, office protective measures		X	MOR-9
Comment: The police department maintains a radio system to include emergency bands in the event of communication disruption. (high/high)			
City Hall & Police Station: Inspection to evaluate structural integrity to withstand earthquake and snow or ash loading on roof	X		
Comment: Work is underway to repair police department roof, and provide structural integrity to the PD. The City Hall is a stand alone entity and as such maintains a regular inspection to insure structural integrity.			
Water Reservoir: Removal of surrounding trees	X		
Comment: There are no trees threatening the reservoir.			
Water Reservoir: Inspections to evaluate structural integrity to withstand earthquake and snow/ash loading on roof	X		
Comment: All of the buildings and out structures are structurally sound.			
Water System Intake: Install Chemical additive pumps at City's back-up emergency well.	X		
Comment: The well works had just been replaced and plans for the installation of a water filter/treatment facility to be built and connected to the well is currently under way.			
Water System Intake: Routine maintenance on structure.		X	
Comment: Water intake is scheduled for replacement within the next year.			
Water System Intake: Roads graded and ditches cleaned. Bridge is a more recent concern	X		

Comment:	The Connoly Creek bridge has been replaced and work is scheduled for replacement and repair of the headworks access as well as the headworks itself.
Protective clothing to curtail disease outbreak.	X
Comment:	Precautionary clothing is being worn where applicable.

5.8 Hazard Mitigation Action Plan

Table 5-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 5-16 identifies the priority for each action.

Table 5-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action MOR-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas.						
Hazards Mitigated:	Earthquake, Flood, Volcano, Severe Weather					
Existing	1, 5, 6	City of Morton, City Council	City of Morton, City Hall	High	HMGP, BRIC, FMA	Long term
Action MOR-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community.						
Hazards Mitigated:	Flood, Earthquake, Wildfire, Landslides, Volcano					
New and Existing	1, 2, 3, 6	City of Morton, County building codes	City of Morton City Hall	Low	Staff Time, General Funds	Short term
Action MOR-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Flood, earthquake, wildfire, severe weather, landslide, volcano					
New and Existing	1,2, 3	Morton Police,	Morton Public Works, Morton City Hall, Lewis County EMS	Low	Staff Time, General Funds	Short term
Action MOR-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Flood					
New and Existing	1, 2, 3, 4, 5, 6	Morton City Hall	Lewis County Code Dept. Morton City Council	Low	Staff Time, General Funds	Short term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action MOR-5—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
	1, 5	Morton City Hall	Morton City Council, Morton Public works	High	HMGP, BRIC, FMA	Long term
Action MOR-6—Purchase improved equipment for road maintenance and repair for the Public Works Department during an incident.						
Hazards Mitigated:	Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche					
New	1, 6	Morton Public Works	Morton Police Department	High	Road Equipment Grants	Long-Term
Action MOR-7—Add signage by use of road signs, informational signs, caution signs, and regulatory signs to be used during road maintenance following a disaster.						
Hazards Mitigated:	Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure					
New	1, 4, 6	Morton Public Works	Morton Police Department	High	Road Equipment Grants	Medium Term
Action MOR-8— Increase sheltering capabilities by purchasing sleeping bags, blankets, pillows, tents, etc.						
Hazards Mitigated:	Earthquake, Wildfire, severe weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure					
New	1, 6	City of Morton	Morton Police Department	High	Preparedness Grant	Medium Term
Action MOR-9— Upgrade Radio Communications in coordination with Lewis County Communications						
Hazards Mitigate:	Earthquake, Wildfire, Severe Weather, Landslide Volcano, Flooding, Avalanche, Dam Failure					
New	4, 6	Morton Police Department	Lewis County Communications	High	Preparedness Grant	Medium Term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 5-16. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	High	High
2	4	Low	Low	Yes	No	Yes	Low	Low
3	3	Low	Low	Yes	No	Yes	Low	Low
4	6	Low	Low	Yes	No	Yes	Low	Low
5	2	High	High	Yes	Yes	No	High	High
6	2	High	High	Yes	No	No	Medium	Low
7	3	High	High	Yes	No	No	Medium	Low
8	2	High	High	Yes	No	No	Medium	Low
9	2	High	High	Yes	No	No	Medium	Low

5.9 Information Sources Used for This Annex

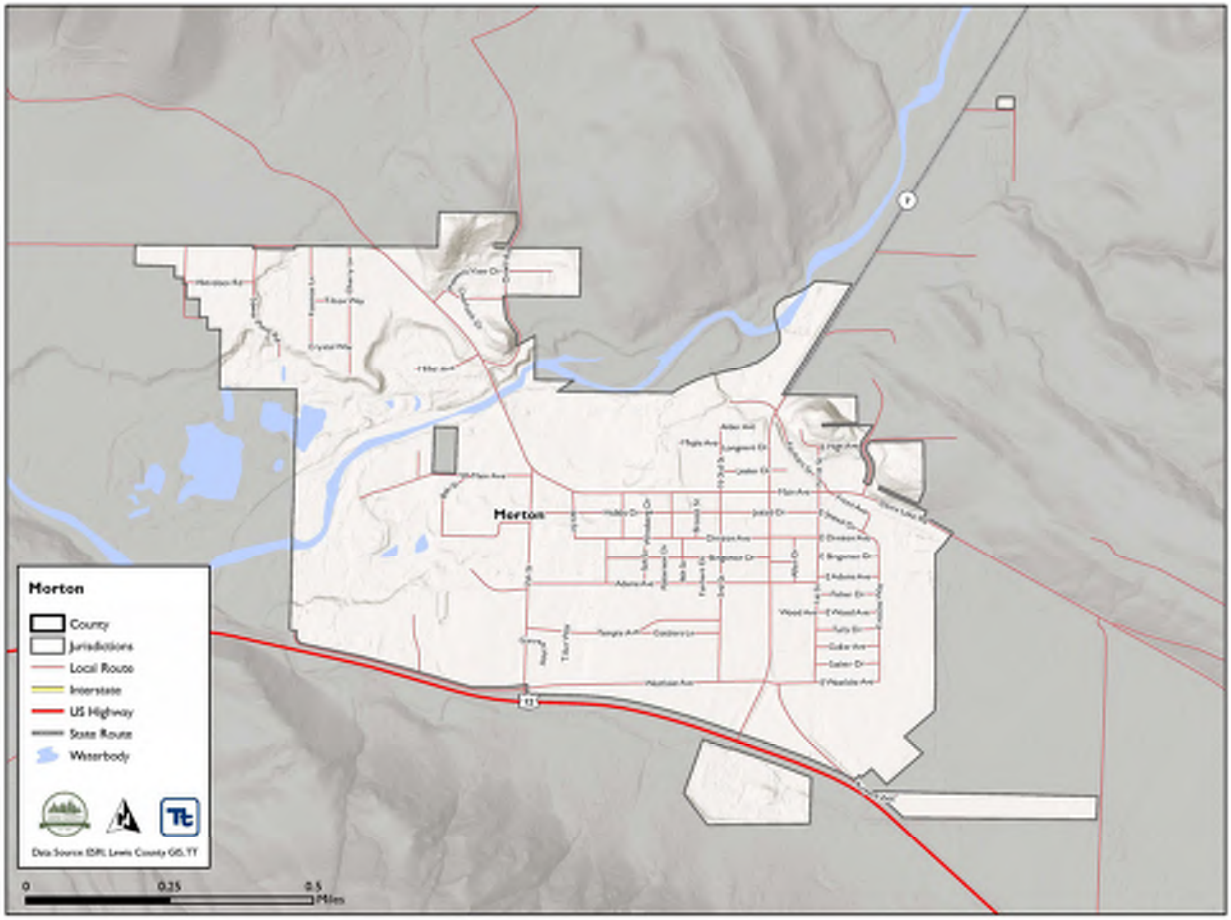
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **City of Morton Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Morton Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

5.10 Hazard Maps


Morton
Morton
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Data Source: ESRI, Lewis County GIS, TT
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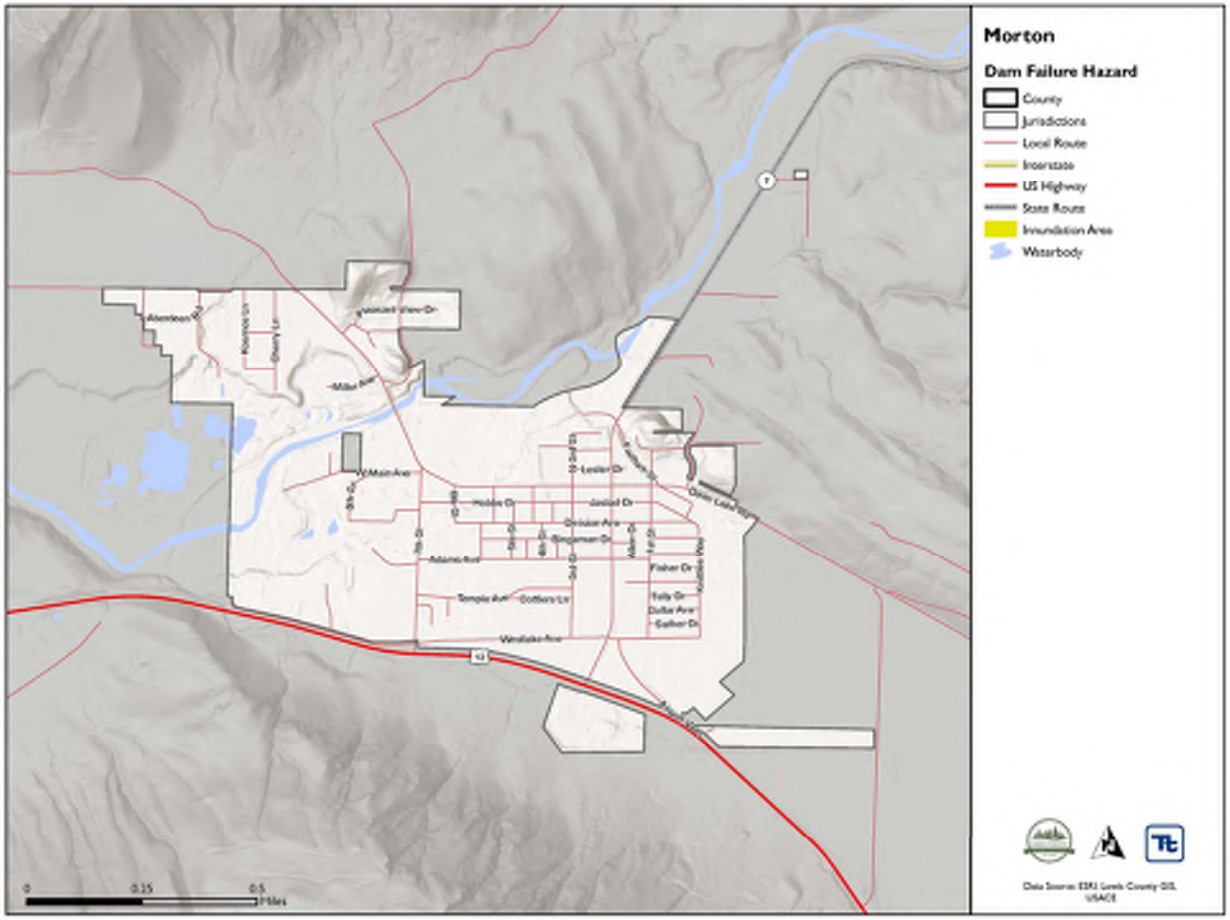
0.25
0.5
Miles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Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
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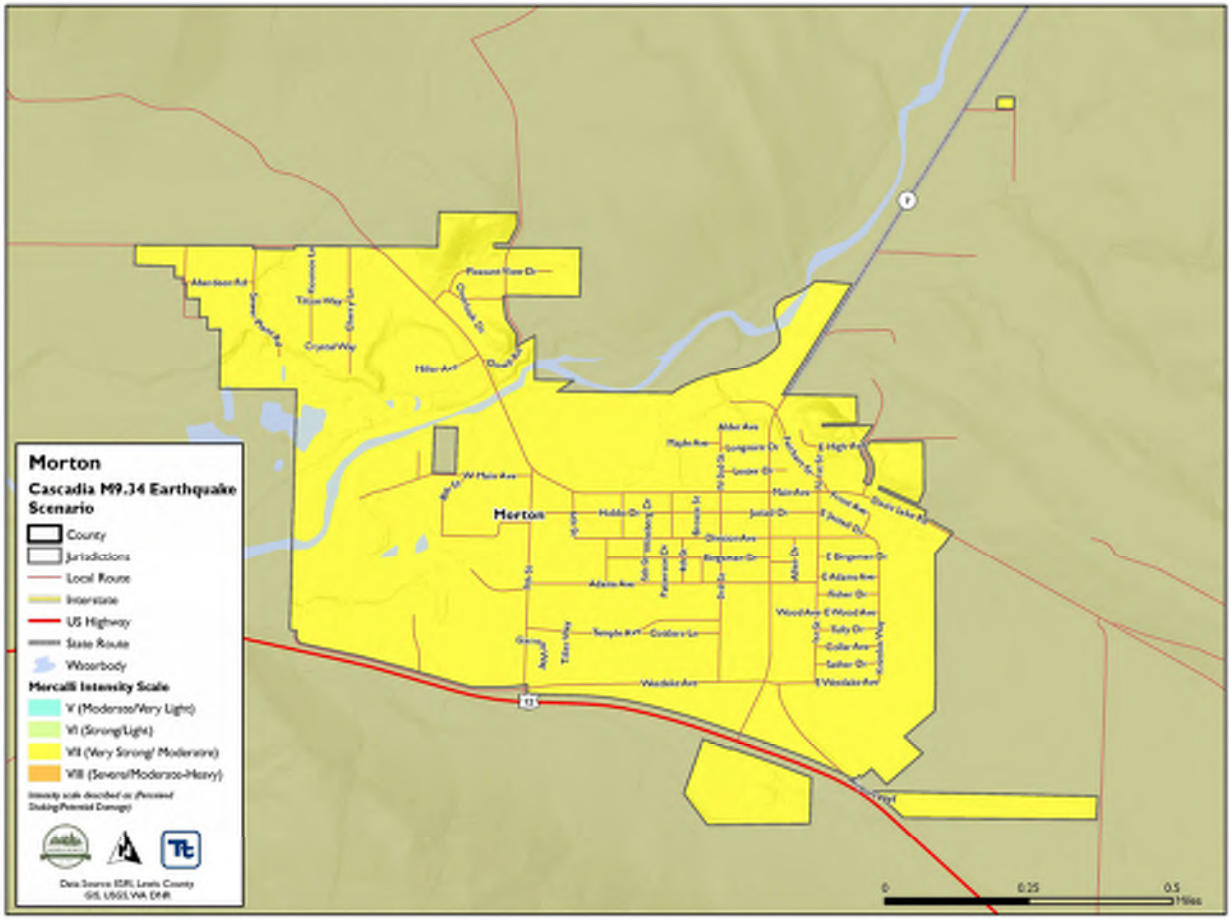
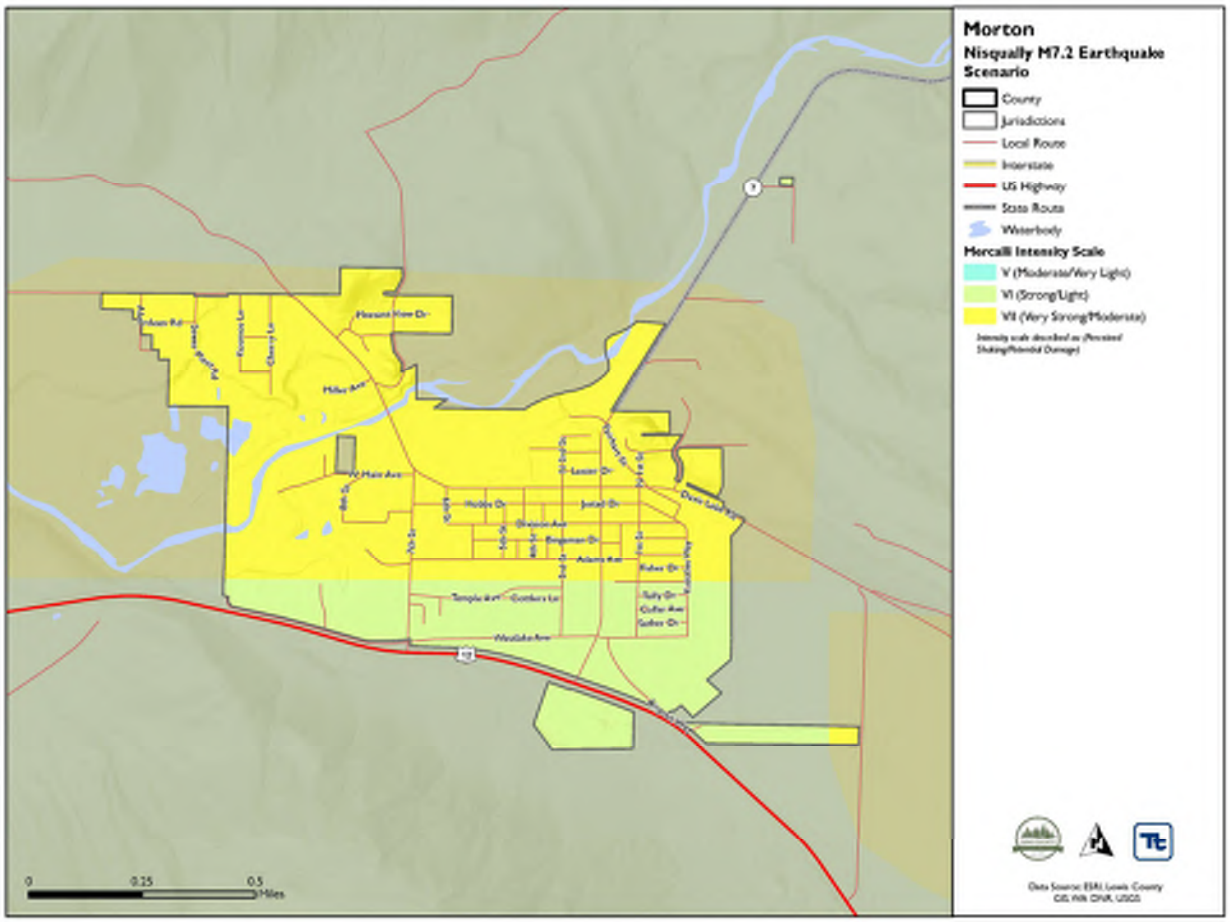
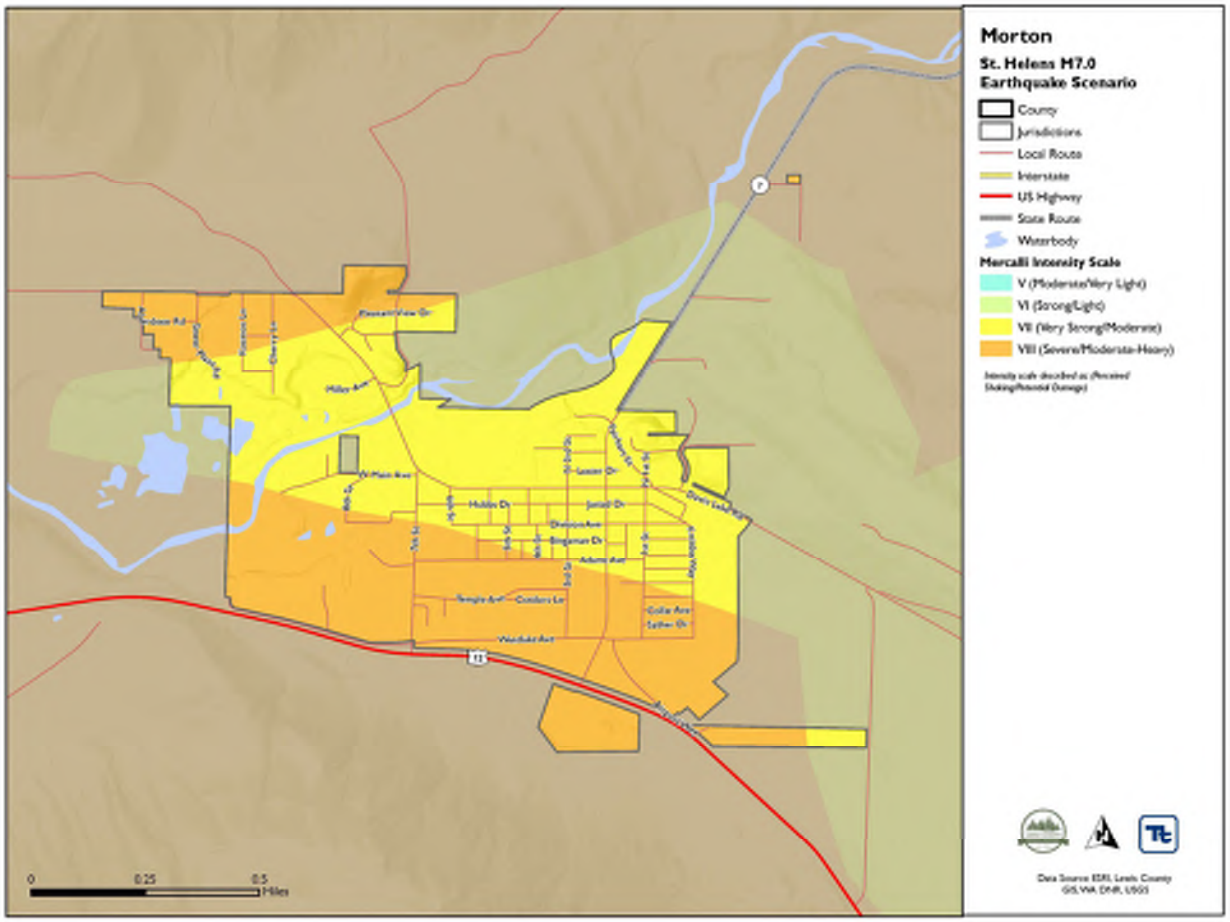
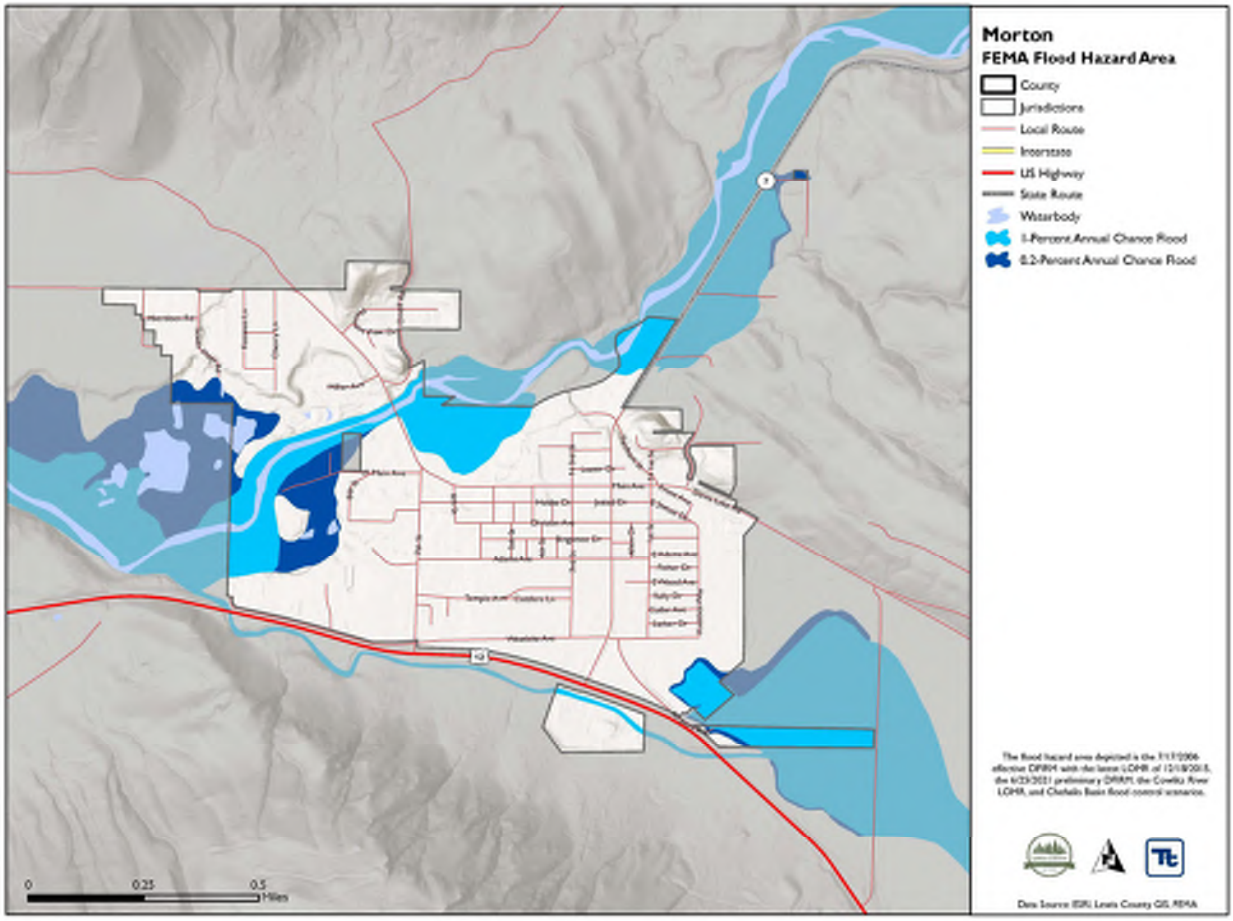
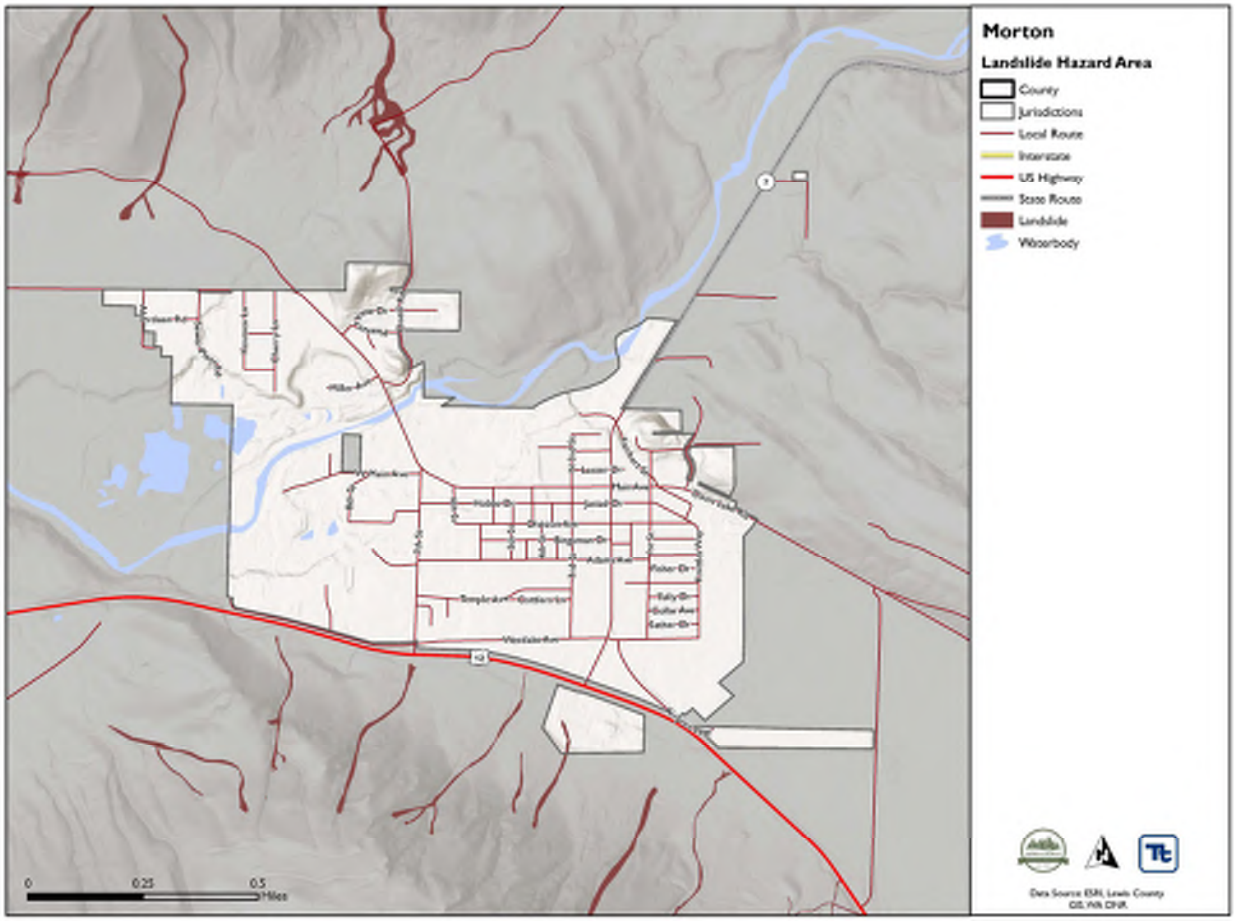
0.5
Miles

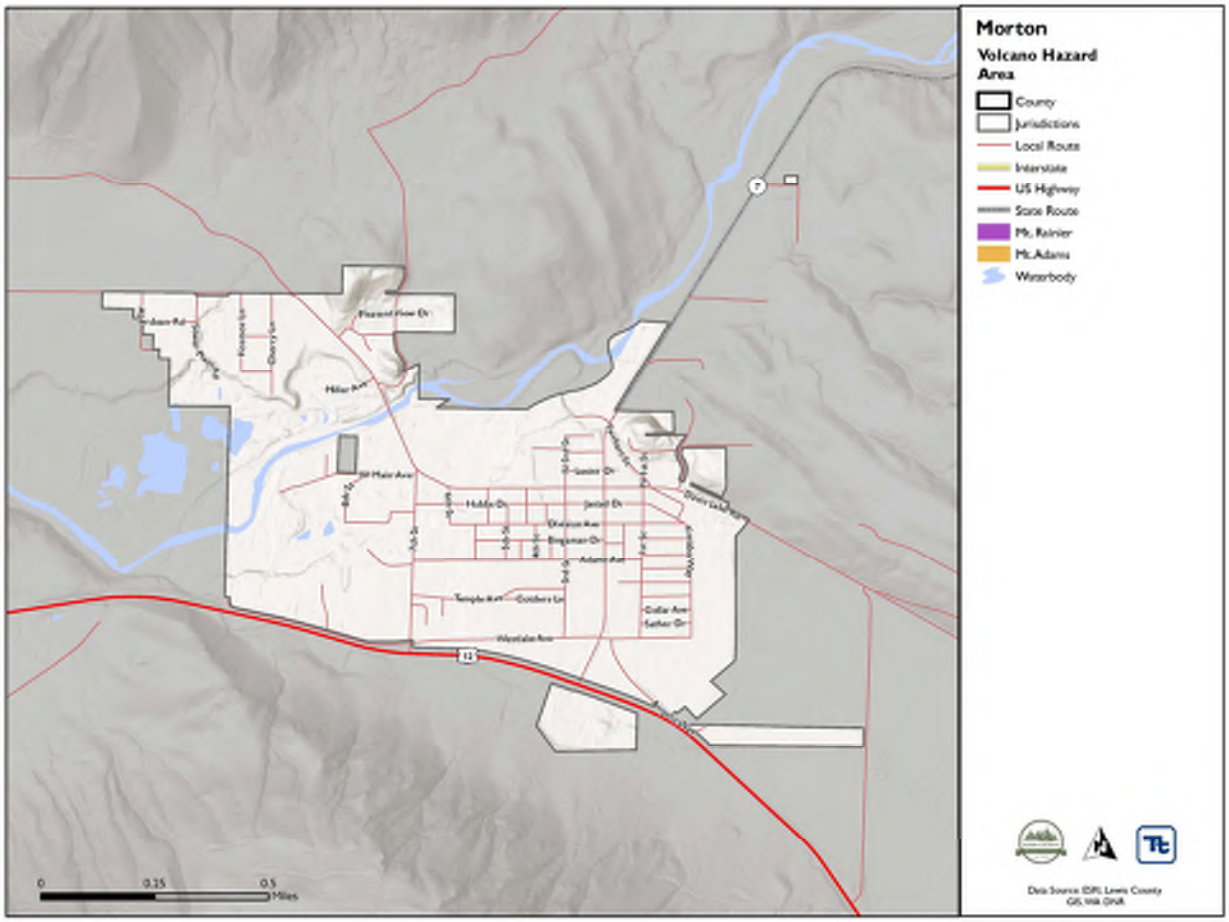

Morton
Cascadia M9.14 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Morton
0
0.25
0.5
Miles


Morton
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0
0.25
0.5
Miles


Morton
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
0
0.25
0.5
Miles


Morton
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent-Annual-Chance Flood
0.2-Percent-Annual-Chance Flood
0
0.25
0.5
Miles


Morton
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0
0.25
0.5
Miles


Morton
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0
0.25
0.5
Miles

6.0 CITY OF MOSSYROCK

6.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Randall Sasser, Mayor
PO Box 96
Mossyrock, WA 98564
Telephone: 360-983-3300
e-mail Address: mayor@cityofmossyrock.com
email Address: clerk@cityofmossyrock.com

Alternate Point of Contact
Damon Stevens, W/WW Contract Operator
PO Box 96
Mossyrock, WA 98564
Telephone: 253-381-1901 (Cell)
Email Address:
freedomenvironmentalservices@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 6-1.

Table 6-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Randall Sasser	Mayor
Damon Stevens	W/WW Contract Operator
Tony Poukkula	Public Works Assistant

6.2 Jurisdiction Profile

6.2.1 Location and Features

The City of Mossyrock is located on U.S. 12 where Washington Route 122 converge. Mossyrock is approximately 20 miles east of Interstate 5. According to the United States Census Bureau, the city has a total area of 0.4 square miles. The City is nestled between Mayfield and Rifle lakes along Klickitat Creek. The City of Mossyrock is characterized by a broad floodplain and low terraces surrounded by upland valleys of low to moderate relief that have broad, rounded ridges.

6.2.2 History

Mossyrock started as a traditional crossroads settlement along the Cowlitz River at the eastern end of the Klickitat Prairie in the 1840's. The City of Mossyrock was incorporated January 13, 1948.

6.2.3 Governing Body Format

The Mossyrock City Council assumes responsibility for the adoption of this plan; the City of Mossyrock will oversee its implementation.

6.3 Current Trends

6.3.1 Population

According to the Office of Financial Management, the population estimate of City of Mossyrock as of June 2023 was 785 Since 2020, the population has grown at an average annual rate of 1%.

6.3.2 Development

The City of Mossyrock anticipates slow to no growth (under 2%). The population for Mossyrock by 2030 is estimated to be around 920 people. The City envisions maintaining its two active retail areas, preserving and adding to its base of open space and agricultural land, and maintaining neighborhoods with diverse housing options.

The Neighborhood District is structured to provide single family and duplex homes, schools, churches, parks, agricultural activities, manufactured homes and apartments, home-businesses, professional offices, and bed and breakfast business. The density for this district will be no more than five dwelling units per acre for single family residences and 25 dwelling units per acre for apartments. The Market District provides for shopping and service uses including retail sales and services, small equipment sales and repair, offices, public buildings, motels, recreational vehicle parks and light industry.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 6-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 6-2. Recent and Expected Future Development Trends.

Criterion		Response					
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?		Yes					
If yes, give the estimated area annexed and estimated number of parcels or structures.	38 Acres, 4 Parcels (Smith Annexation) SE, NE, S13, T12, R2E						
Is your jurisdiction expected to annex any areas during the performance period of this plan?		No					
If yes, describe land areas and dominant uses. *If yes, who currently has permitting authority over these areas?*							
Are any areas targeted for development or major redevelopment in the next five years?		No					
If yes, briefly describe, including whether any of the areas are in known hazard risk areas.							
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	**Single Family**	0	3	1	7	0	1
	Multi-Family	0	2	2	0	0	0
	Other	0	0	0	0	0	0
	Total	0	5	3	7	0	1

Criterion	Response
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: #0 • Landslide: #0 • High Liquefaction Areas: #0 • Wildfire Risk Areas: #0
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	N/A

6.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 6-3.
- Development and permitting capabilities are presented in Table 6-4.
- An assessment of fiscal capabilities is presented in Table 6-5.
- An assessment of administrative and technical capabilities is presented in Table 6-6.
- An assessment of education and outreach capabilities is presented in Table 6-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 6-8.
- Classifications under various community mitigation programs are presented in Table 6-9.
- The community's adaptive capacity for the impacts of climate change is presented in
- Table 6-10.

Table 6-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code *Comment:*	Yes	Yes	Yes	No
Zoning Code *Comment:*	Yes	Yes	No	No
Subdivisions *Comment:*	Yes	Yes	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Stormwater Management	Yes	No	Yes	No
Comment:				
Post-Disaster Recovery	No	No	No	No
Comment:				
Real Estate Disclosure	No	No	No	No
Comment:				
Growth Management	Yes	Yes	Yes	No
Comment:				
Site Plan Review	Yes	Yes	No	No
Comment:				
Environmental Protection	No	No	Yes	No
Comment:				
Flood Damage Prevention	No	No	No	No
Comment:				
Emergency Management	Yes	Yes	Yes	No
Comment:				
Climate Change	No	No	No	No
Comment:				
Other	No	No	No	No
Comment:				
Planning Documents				
Comprehensive Plan	Yes	Yes	Yes	No
Comment:				
Capital Facilities Plan	Yes	No	Yes	No
How often is the plan updated? Last known update 1998				
Comment:				
Disaster Debris Management Plan	No	No	No	No
Comment:				
Floodplain or Watershed Plan	No	No	No	No
Comment:				
Stormwater Plan	Yes	No	No	No
Comment:				
Water Systems Plan	Yes	No	Yes	No
Comment:				
Habitat Conservation Plan	No	No	No	No
Comment:				
Economic Development Plan	No	No	No	No
Comment:				
Shoreline Management Plan	No	No	No	No
Comment:				
Community Wildfire Protection Plan	No	No	No	No
Comment:				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Forest Management Plan *Comment:*	No	No	No	No
Climate Action Plan *Comment:*	No	No	No	No
Comprehensive Emergency Management Plan *Comment:*	Yes	No	No	No
Threat and Hazard Identification and Risk Assessment (THIRA) *Comment:*	No	No	No	No
Post-Disaster Recovery Plan *Comment:*	No	No	No	No
Continuity of Operations Plan *Comment:*	No	No	No	No
Public Health Plan *Comment:*	No	No	No	No
Other *Comment:*	No	No	No	No

Table 6-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	Yes
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	No

Table 6-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service *If yes, specify:* Water/Sewer Access Fees for new "hookups" assessed	Yes
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 6-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:* Jackson Civil Engineering & Planning Commission Chairperson	Yes
Engineers or professionals trained in building or infrastructure construction practices *If yes, Department/Position:* Jackson Civil Engineering	Yes
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:*	No
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:* Mayor	Yes
Grant writers *If yes, Department/Position:*	No

Table 6-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 6-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Building
Who is your floodplain administrator? (Department/Position)	Building Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* Ord 496. MMC 22.12 Flood Damage Prevention	12/9/2021
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes what is the effective date.* November 1981	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* No *If no, is your jurisdiction interested in joining the CRS program?* No	No
How many flood insurance policies are in force in your jurisdiction?*[a]* *What is the premium in force?* $N?A	0
How many total loss claims have been filed in your jurisdiction?*[a]* *How many claims are still open or were closed without payment?* 0	0
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance During and after an event, the Floodplain Administrator will perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations.	

Table 6-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No		Date
DUNS #	Yes		Unknown
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No		N/A
Public Protection	No		N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 6-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

6.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

6.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **None**

6.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Comprehesive Plan**
- **Water/Sewer Plans**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

6.6 Risk Assessment

6.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 6-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 6-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$0
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$0
Flooding and Mudslides	4635	11/13-11/15/2021	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$0
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$0
Biological, COVID-19	4481	1/20/2020-9/11/2023	$0
Biological, COVID-19	3427	1/20/2020-9/1/2023	$0
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$0
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$0
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$0
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	$0
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$0

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$0
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$0
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$0
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$0
Earthquake	1361	2/28-3/16/2001	$0
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$0
Severe Storms, Flooding	1100	1/26-2/23/1996	$0
Storms, High Winds, Floods	1079	11/7-12/18/1995	$0
Severe Storm, High Winds	981	1/20-1/21/1993	$0
High Tides, Severe Storm	896	12/20-12/31/1990	$0
Flooding, Severe Storm	883	11/9-12/20/1990	$0
Flooding, Severe Storm	852	1/6-1/14/1990	$0
Severe Storms, Flooding	784	11/22-11/29/1986	$0
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$0
Severe Storms, Mudslides, Flooding	545	12/10/1977	$0
Severe Storms, Flooding	492	12/13/1975	$0
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$0
Severe Storms, Flooding	322	2/01/1972	$0
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$0
Heavy Rains and Flooding	185	12/29/1964	$0

6.6.2 Hazard Risk Ranking

Table 6-12 and Table 6-13 present a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 6-12. Hazard Risk Ranking – City Limits.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	36	High
2	Earthquake	32	Medium
3	Severe Weather	18	Medium
4	Landslide	12	Low
5	Flood	0	Low
6	Avalanche	0	Low
7	Wildfire	0	Low
8	Volcano	0	Low

Table 6-13. Hazard Risk Ranking – UGA.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	36	High
2	Earthquake	32	Medium
3	Severe Weather	18	Medium
4	Flood	12	Low
5	Landslide	0	Low
6	Avalanche	0	Low
7	Wildfire	0	Low
8	Volcano	0	Low

6.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

6.7 Status of Previous Plan Actions

Table 6-14 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 6-14. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Lift Station #1: Purchase generator and set at site, sandbags for floor control (Lift Station #1). *Comment:*	X			
Purchase generator and set at site, sandbags for flood control (Lift Station #2). *Comment:*	X			
Access building for seismic/ash load capabilities (City Hall). *Comment:*	X			
Video camera system, alarm for unauthorized entry, assessment for structural retrofit (Reservoir #1 & #2). *Comment:*	X			
Video camera system, alarm for unauthorized entry, assessment for structural retrofit (Reservoir #3). *Comment:* No longer necessary		X		
Police Department: Portable generator to run radio base station. Purchase satellite phone (PD) *Comment:* No longer necessary		X		
Gravel and sandbags for flood control. Purchase video camera system. (Wastewater Treatment Plant). *Comment:* No longer necessary		X		
Sandbags for flood control, have gravel at site, purchase generator, alarm system for unauthorized entry. *Comment:* No longer necessary		X		
Access existing generator to power lift station. (Lift #1) *Comment:*	X			
Access existing generator to power lift station (Lift #2) *Comment:*	X			
Elevate above flood level (Lift #2) *Comment:*	X			
Have sandbags available during flood event (Lift #2) *Comment:*	X			
Access well and determine if a generator can run it. Have sandbags on hand in case of hazard (Wells) *Comment:*	X			

6.8 Hazard Mitigation Action Plan

Table 6-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 6-16 identifies the priority for each action.

Table 6-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action MOS-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure						
Existing		Planning and Public Works		High	HMGP, BRIC, FMA	Long-term
Action MOS-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community, including the Comprehensive Plan.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure						
New and Existing		Planning and Public Works		Low	Staff Time, General Funds	Short-term
Action MOS-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure						
New and Existing		Administration		Low	Staff Time, General Funds	Medum-term
Action MOS-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Flood						
New and Existing		Planning		Low	Staff Time, General Funds	Short-term
Action MOS-5—Identify and pursue strategies to increase adaptive capacity to climate change, including but not limited to the following: • Wildfire risk reduction • Severe weather • Dam failure						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Landslide, Volcano, Flooding, Avalanche, Dam Failure						
New and Existing		Administration		Low	Staff Time, General Funds	Medium-term
Action MOS-6—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including, but not limited to Ciy Hall and schools.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing		Public Works		High	Staff Time, General Funds, BRIC, HMGP	Long-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 6-16. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1		High	High	Yes	Yes	No	Low	Low
2		High	Low	Yes	No	Yes	High	Low
3		Medium	Low	Yes	No	Yes	High	Low
4		Medium	Low	Yes	No	Yes	High	Low
5		Medium	Low	Yes	No	Yes	Medium	Low
6		High	High	Yes	Yes	No	Low	Low

6.9 Information Sources Used for This Annex

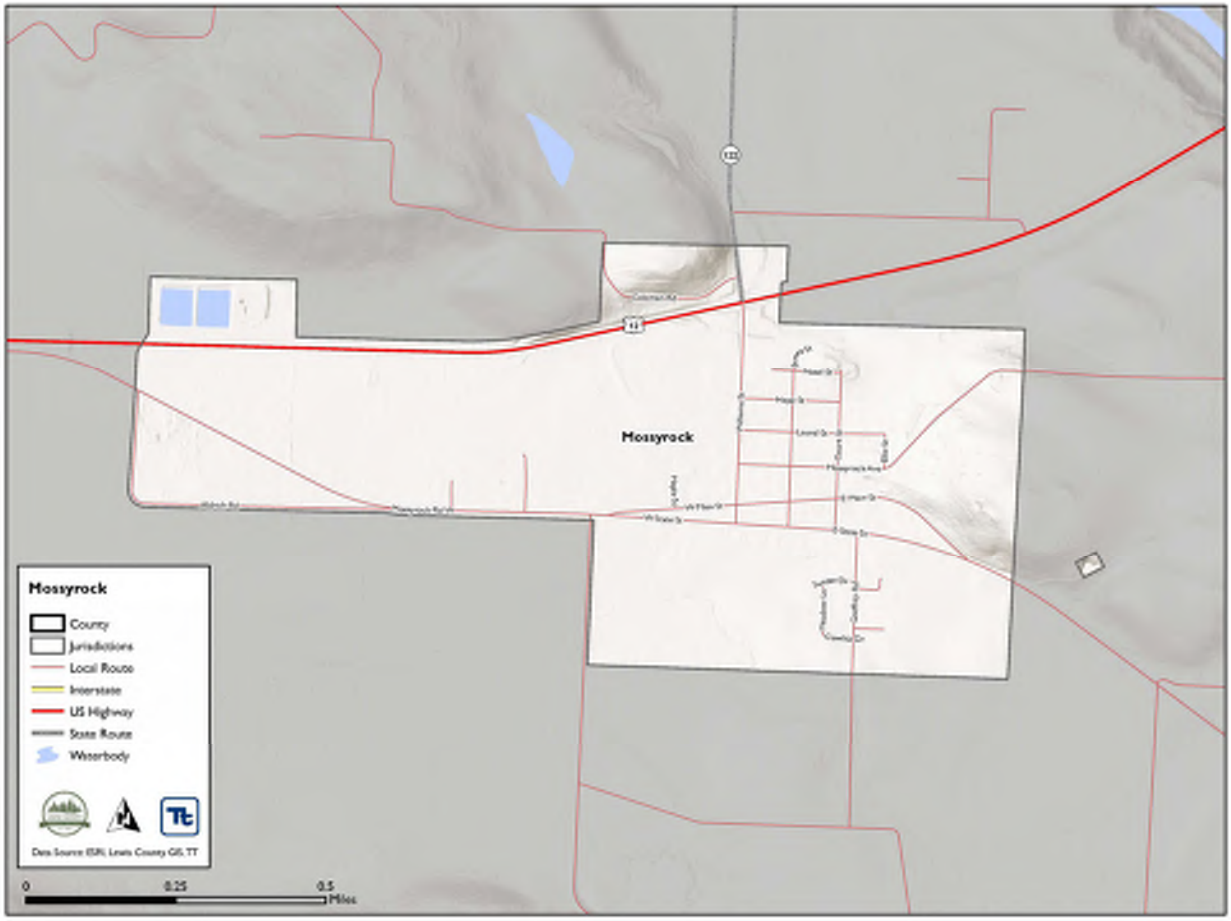
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- Hazard Mitigation Plan Toolkit

The following outside resources and references were reviewed:

- N/A

6.10 Hazard Maps


Mossyrock
Mossyrock
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
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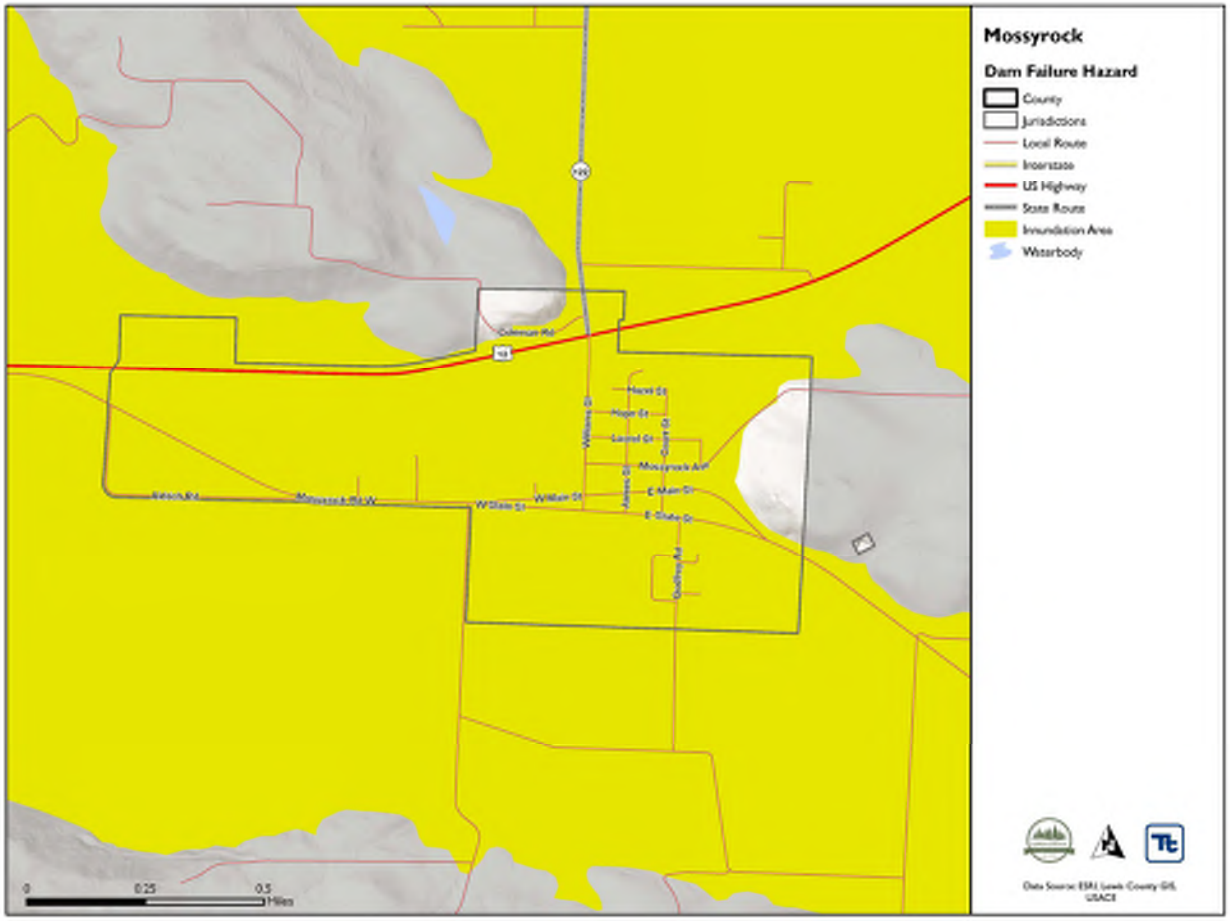
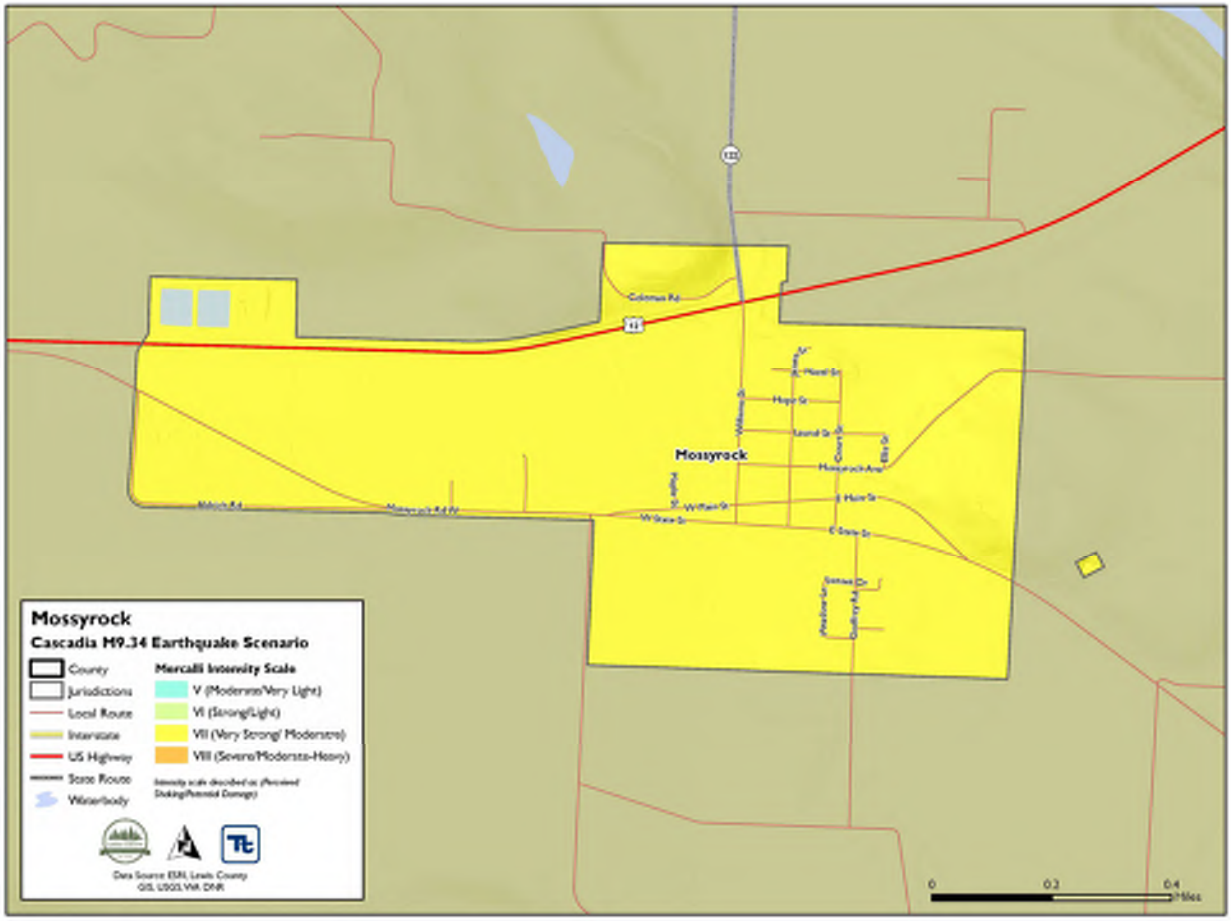
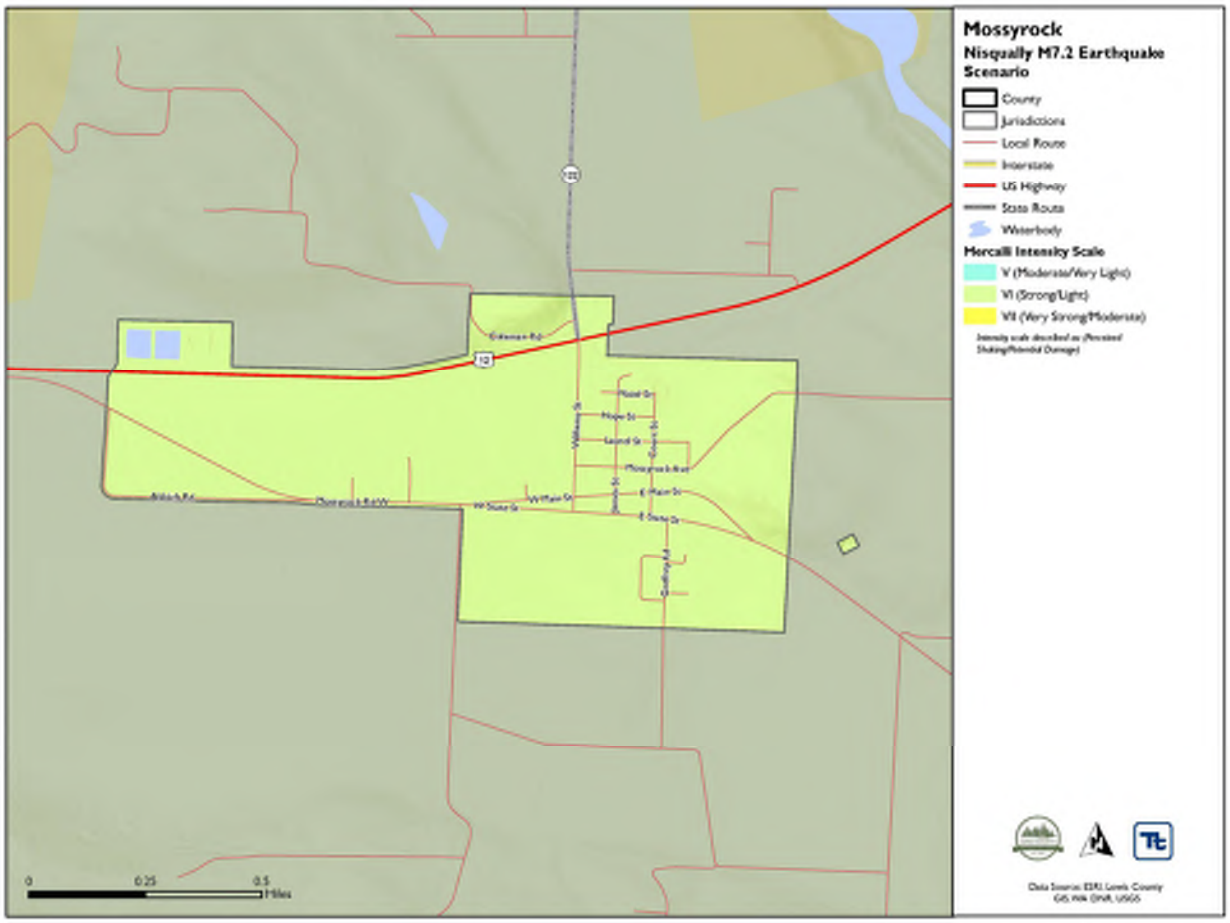
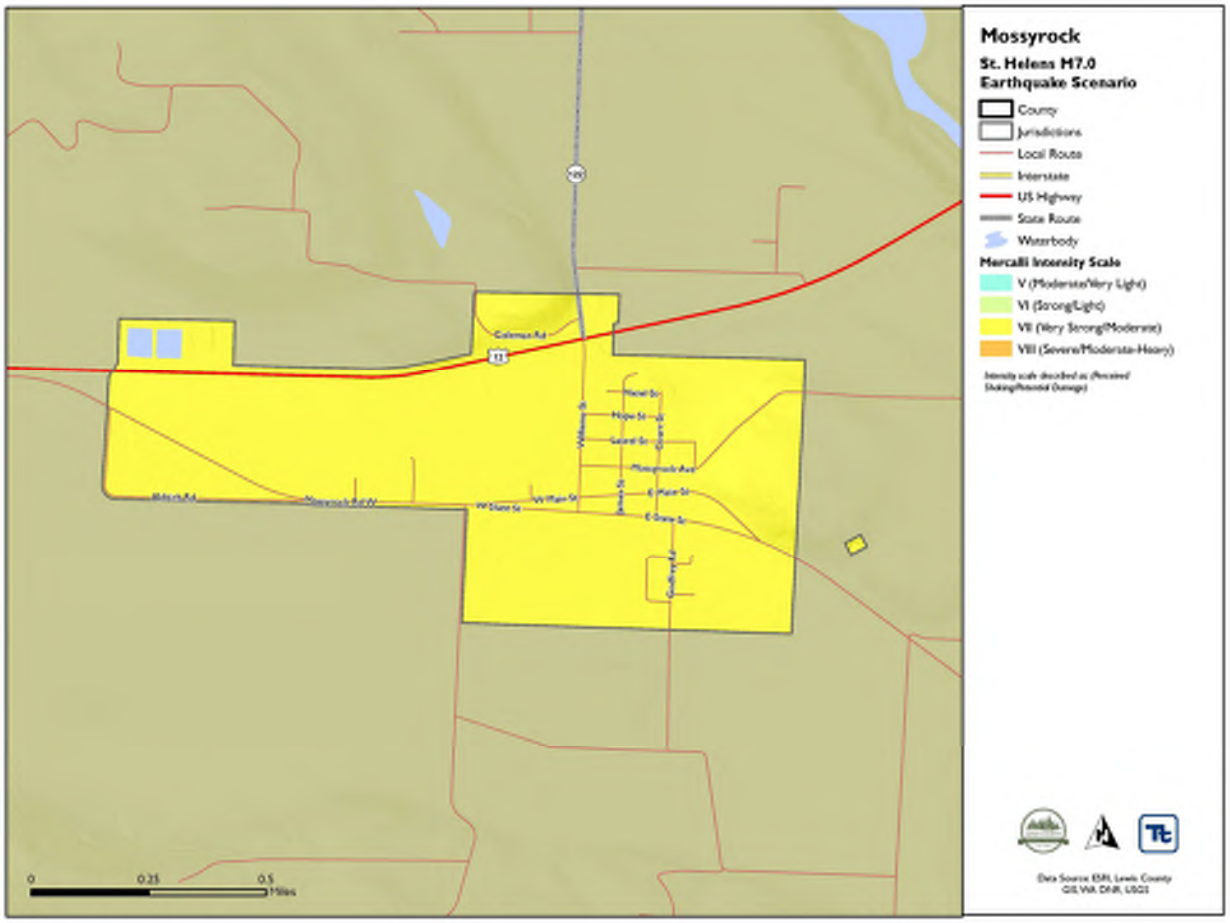
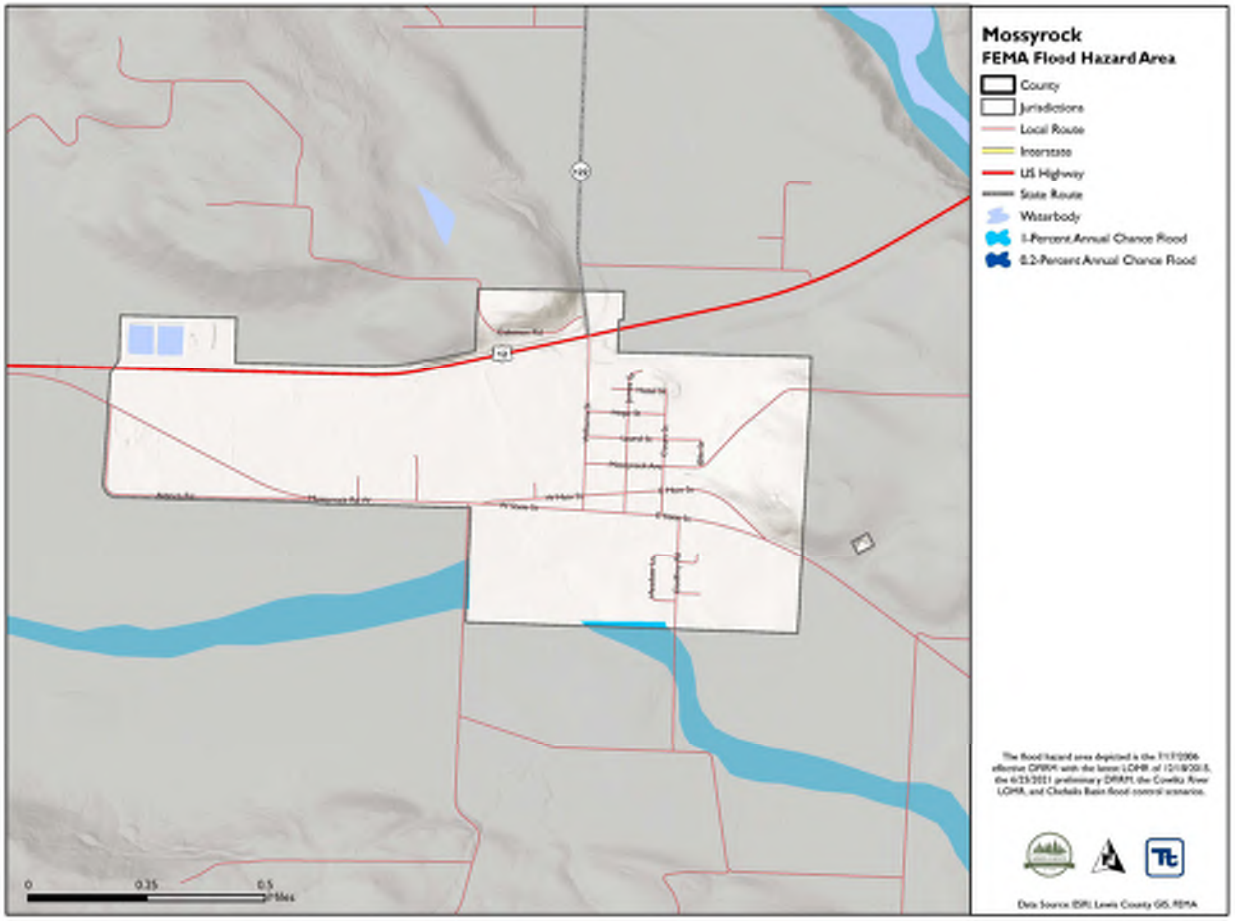
0.5
Miles

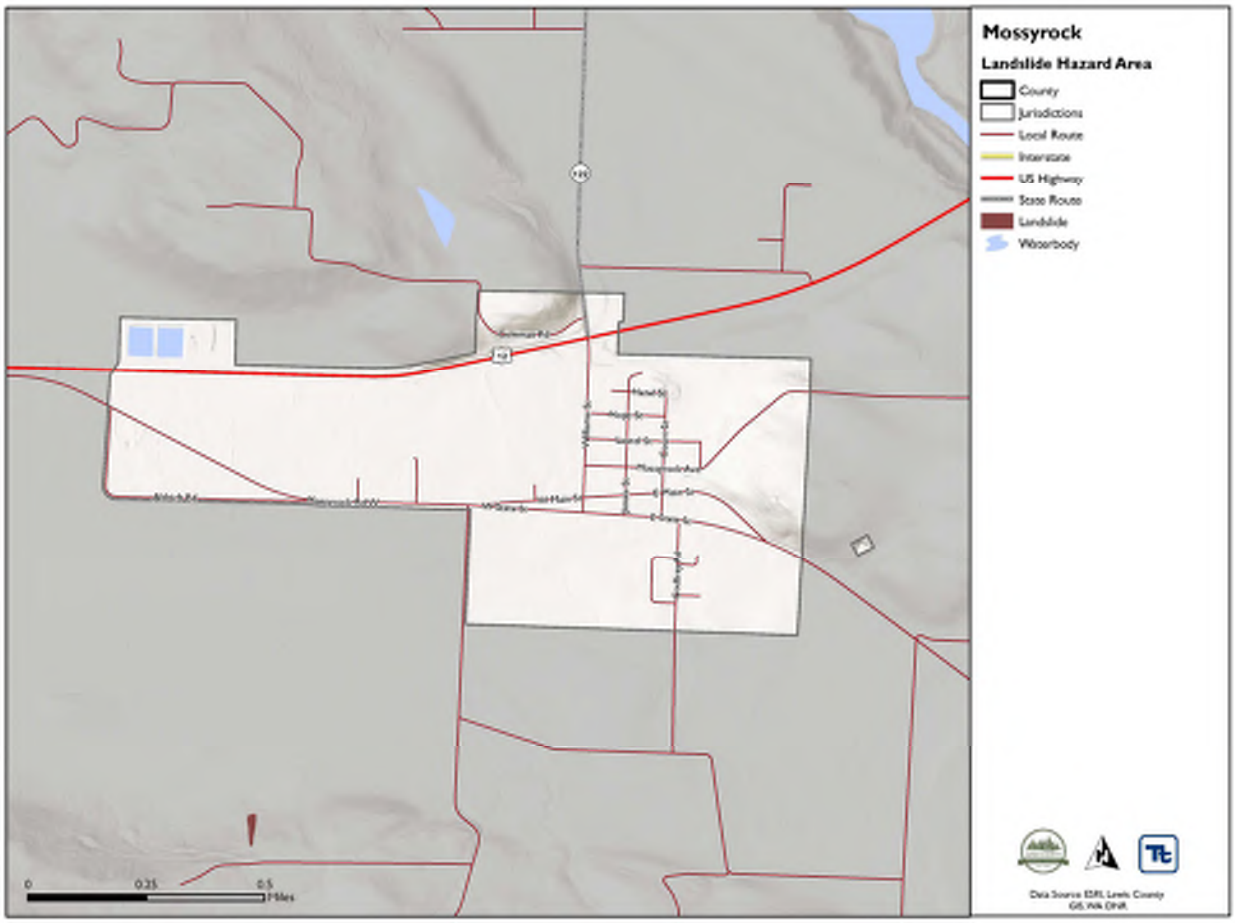

Mossyrock
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
Data Source: ESRI, Lewis County GIS, USACE
0
0.25
0.5
Miles

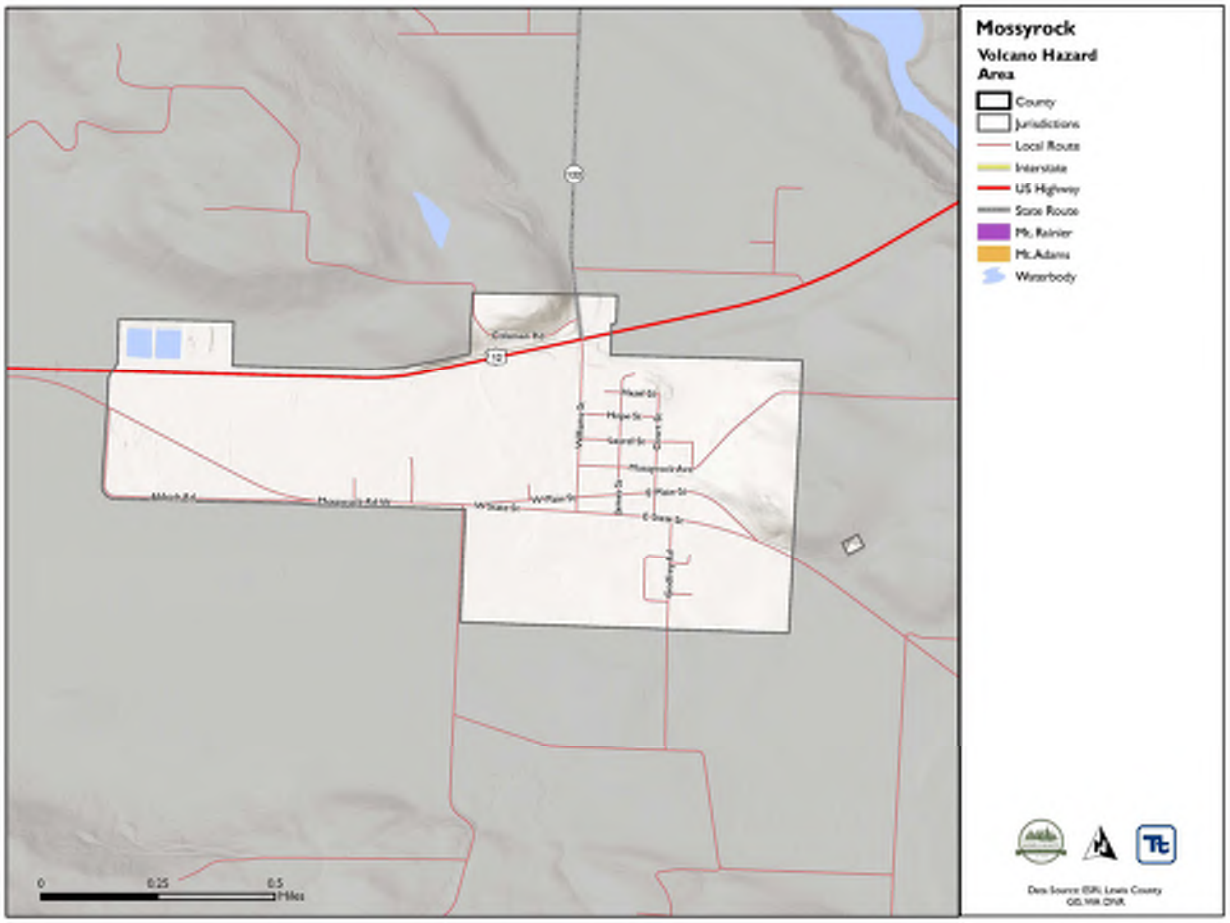

Mossyrock
Cascadia M9.34 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Data Source: ESRI, Lewis County GIS, USGS, WA DNR
Mossyrock
0
0.2
0.4
Miles


Mossyrock
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0
0.25
0.5
Miles


Mossyrock
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
Intensity scale described as Perceived Shaking/Potential Damage
Data Source: ESRI, Lewis County GIS, WA DNR, USGS
0
0.25
0.5
Miles


Mossyrock
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent Annual Chance Flood
0.2-Percent Annual Chance Flood
0
0.25
0.5
Miles


Mossyrock
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0
0.25
0.5
Miles


Mossyrock
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0
0.25
0.5
Miles

7.0 CITY OF WINLOCK

7.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Brandon Svenson, Mayor
PO Box 777
Winlock, WA 98596
Telephone: 360-785-3811
e-mail Address: mayor@cityofwinlock.com

Alternate Point of Contact
Deavon Jacobson, PD Records Clerk
PO Box 777
Winlock, WA 98596
Telephone: 360-785-3891
e-mail Address:
wpdclerk@cityofwinlock.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 7-1.

Table 7-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Brandon Svenson	Mayor
Robert Webster	Community Development Director
Stephen Valentine	Chief of Police
Deavon Jacobson	PD Records Clerk

7.2 Jurisdiction Profile

7.2.1 Location and Features

Winlock is approximately 3 miles west of Interstate 5 on SR 505. According to the United States Census Bureau, the city has a total area of 1.29 square miles, all of it land. The City of Winlock is characterized by a broad floodplain and low terraces surrounded by upland valleys of low to moderate relief that have broad, rounded ridges. The Olequa River winds its way through the valley in which the city resides, and is joined by a couple of tributaries, King Creek and Curtis Creek. They are all prone to flooding during periods of abnormally heavy or persistent rain.

7.2.2 History

Winlock began as a Northern Pacific Railroad construction camp called Wheeler's.
Camp in c. 1871. The railroad was then in the process of extending its line from Kalama to Tacoma, WA. Dr. C. C. Pagett, an early resident, donated the land for the town site. In 1873 he named it for General William Winlock Miller of Olympia, a man of some renown in the area. Miller had promised to give a school bell to the town if it were to be named after him. The town was incorporated in 1883.

The Winlock Egg was listed as the world's largest egg by Ripley's Believe It or Not in 1989. The current structure is the fourth reincarnation of the original egg. The first egg was built for a celebration of the opening of the Pacific Highway Bridge over the Columbia River between Washington and Oregon. The idea of an egg came from John G. Lawrence, the manager of the newly formed egg and poultry CO-OP as

a way to represent the growing industry centered in Winlock in the 1920s. During that time farmers in Winlock were shipping as much as a quarter million cases of eggs to market a year.

7.2.3 Governing Body Format

The City of Winlock is governed by a five-member council and mayor. The city consists of six departments: Clerk's Office, Community Development, Public Works, Water & Sewer, Police and Municipal Court. The city currently employs 15 full-time employees.

The Winlock City Council assumes responsibility for the adoption of this plan; City Council will oversee its implementation.

7.3 Current Trends

7.3.1 Population

According to the Office of Financial Management (OFM), the population of the City of Winlock as of April 2022 was 1695 Since 2020, the population has grown at an average annual rate of 15% percent.

7.3.2 Development

The City of Winlock has seen development growth over the last few years. The total amount of land inventoried within the city limits of Winlock is 544.86 acres. Winlock is mostly a residential community with residential zoning upon nearly two-thirds of land within the city limits. Winlock's UGA area includes 1,370 acres and nearly half is zoned commercial or industrial while only one-third is residential. Over the last 20 years, development has begun to spread into the UGA.

There are a variety of commercial services offered in the City of Winlock comprising of 77.17 acres. These include retail and wholesale trades, professional businesses, restaurants, service outlets and repair facilities. Industrial land makes up 41.34 acres and includes three major manufacturing industries. The Winlock UGA has 566 acres near the I-5 interchange. Approximately 497 acres are not developed. However, Benaroya Corporation owns 331 acres that will become the Winlock Commercial and Industrial Park.

Future growth in the city will be managed as identified in the City of Winlock 2019 Comprehensive Plan to maintain the current mix of light industry and single-family residential uses, provided that future industrial growth conforms to more modern light industrial zoning.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 7-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 7-2. Recent and Expected Future Development Trends.

Criterion							Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?							Yes
If yes, give the estimated area annexed and estimated number of parcels or structures.	1,131 acres, 239 parcels						
Is your jurisdiction expected to annex any areas during the performance period of this plan?							Yes
If yes, describe land areas and dominant uses.	Total land area is 1,352.95 acres; uses are residential, light industrial and agricultural.						
If yes, who currently has permitting authority over these areas?	Permitting authority is the City of Winlock.						
Are any areas targeted for development or major redevelopment in the next five years?							Yes
If yes, briefly describe, including whether any of the areas are in known hazard risk areas.	331 acres in the UGA that is currently in the annexation process will be a commercial/industrial park, no known hazard risk areas.						
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	**Single Family**	7	3	NA	39	226	43
	Multi-Family	0	0	NA	0	9	11
	Other	5	0	NA	5	8	9
	Total	12	3	NA	44	243	63
Provide the number of new construction permits for each hazard area or provide a qualitative description of where development has occurred.	We do not track by hazard area; most development has occurred in minor hazardous areas.						
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	Residential potentially buildable area is 397.6 acres and 192.3 constrained acres. Commercial potentially buildable area is 99 acres and 14.5 constrained acres. Mixed use potentially buildable area is 1, 557.7 acres and 289.8 constrained acres.						

7.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 7-3.
- Development and permitting capabilities are presented in Table 7-4.
- An assessment of fiscal capabilities is presented in Table 7-5.
- An assessment of administrative and technical capabilities is presented in Table 7-6.
- An assessment of education and outreach capabilities is presented in Table 7-7.

- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 7-8.
- Classifications under various community mitigation programs are presented in Table 7-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 7-10.

Table 7-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	No	Yes	Yes
Comment: Winlock Municipal Code 15.05, Ord. 902, adopted 2004				
Zoning Code	Yes	No	Yes	Yes
Comment: Winlock Municipal Code Title 18, Ord. 943, adopted in 2009				
Subdivisions	Yes	No	No	Yes
Comment: Ordinance 1043, adopted 2016				
Stormwater Management	Yes	No	Yes	Yes
Comment: Shoreline Master Plan, adopted 2017				
Post-Disaster Recovery	Yes	Yes	No	Yes
Comment: Hazard Mitigation Plan, adopted 2016				
Real Estate Disclosure	Yes	No	Yes	Yes
Comment: Part of FEMA/NFIP req.				
Growth Management	Yes	No	Yes	Yes
Comment: City is required to follow RCW 36.70A				
Site Plan Review	Yes	No	No	Yes
Comment: Winlock Municipal Code 18.05, adopted 2009				
Environmental Protection	Yes	No	Yes	Yes
Comment: Winlock Municipal Code 16.05, Ord. 597, adopted 1984				
Flood Damage Prevention	Yes	No	Yes	Yes
Comment: Winlock Municipal Code 15.25, Ord. 663, adopted 1989				
Emergency Management	Yes	Yes	Yes	Yes
Comment: Lewis County Emergency Management				
Climate Change	No	No	No	No
Comment: None				
Other				
Comment: None				
Planning Documents				
Comprehensive Plan	Yes	No	Yes	Yes
Comment: City of Winlock Comprehensive Plan, adopted 2019				
Capital Facilities Plan	Yes	No	Yes	Yes
How often is the plan updated? 7 years				
Comment: Part of the Comprehensive Plan, adopted 2019				
Disaster Debris Management Plan	Yes	Yes	No	Yes
Comment: Lewis County				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Floodplain or Watershed Plan	Yes	No	Yes	Yes
Comment: Part of the Shoreline Master Plan, adopted 2017				
Stormwater Plan	Yes	No	Yes	Yes
Comment: Winlock Municipal Code 13.45.010, adopted 2002				
Water System Plan	Yes	No	Yes	Yes
Comment: City of Winlock Water System Plan, adopted 2020				
Habitat Conservation Plan	Yes	No	Yes	Yes
Comment: Winlock Municipal Code 18.05, Ord. 943, adopted 2009				
Economic Development Plan	Yes	No	Yes	Yes
Comment: City of Winlock Comprehensive Plan, adopted 2019				
Shoreline Management Plan	Yes	No	Yes	Yes
Comment: Shoreline Master Plan, adopted 2017				
Community Wildfire Protection Plan	No	Yes	No	Yes
Comment: Lewis County Fire District #15				
Forest Management Plan	No	No	No	No
Comment: None				
Climate Action Plan	No	No	No	No
Comment: None				
Comprehensive Emergency Management Plan	Yes	No	Yes	Yes
Comment: Comprehensive Plan, updated in 2019				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	No	Yes	No
Comment: Through LC DEM, updated 2022				
Post-Disaster Recovery Plan	No	No	No	No
Comment: None				
Continuity of Operations Plan	No	No	No	No
Comment: To be completed in 2023				
Public Health Plan	No	Yes	Yes	Yes
Comment: Lewis County				

Table 7-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If no, who does? If yes, which department? Community Development Department	
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	Yes

Table 7-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: Residential Bi-Monthly Water Rate is $36.80, Single-Family Bi-Monthly Sewer Rate is $237.86. Both are flat fee.	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 7-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Community Development Director, City Engineer, Public Works	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Community Development Director, City Engineer	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Community Development Director, City Engineer	
Staff with training in benefit/cost analysis	No
If yes, Department/Position:	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	No
If yes, Department/Position:	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Police Department	
Grant writers	No
If yes, Department/Position:	
Other	No
If yes, Department/Position:	

Table 7-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Lewis County Emergency Management	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Lewis County Emergency Management	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alert	Yes

Table 7-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Community Development/City Engineer
Who is your floodplain administrator? (Department/Position)	Community Development Director
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* WMC 15.25 Flood Damage Prevention	2017
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes, what is the effective date?* November 1981	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?* No	No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* $0 *What is the premium in force?* $0	0
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?* $859	2
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance *Describe:* During or after an event, the Floodplain Administrator will perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations.	

a. According to FEMA statistics as of January 18, 2024

Table 7-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes	Unknown	Unknown
DUNS #	Yes	Unknown	Unknown
Community Rating System	No		
Building Code Effectiveness Grading Schedule	Yes		Unknown
Public Protection	No		N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 7-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Medium
Participation in regional groups addressing climate risks *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

7.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

7.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Shoreline Master Plan**—stormwater, shoreline, wetlands, floodplain, critical areas
- **Comprehensive Plan**—land use, facilities, utilities, transportation, planning, economic dev
- **Building Codes** —WMC 15.05

7.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Water System Plan**—water system management

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

7.6 Risk Assessment

7.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 7-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 7-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$0
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$0
Flooding and Mudslides	4635	11/13-11/15/2021	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$0
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$0
Biological, COVID-19	4481	1/20/2020-9/11/2023	$0
Biological, COVID-19	3427	1/20/2020-9/1/2023	$0

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	Not Available
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	Not Available
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	Not Available
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	Not Available
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	Not Available
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	Not Available
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	Not Available
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	Not Available
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	Not Available
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	Not Available
Earthquake	1361	2/28-3/16/2001	Not Available
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	Not Available
Severe Storms, Flooding	1100	1/26-2/23/1996	Not Available
Storms, High Winds, Floods	1079	11/7-12/18/1995	Not Available
Severe Storm, High Winds	981	1/20-1/21/1993	Not Available
High Tides, Severe Storm	896	12/20-12/31/1990	Not Available
Flooding, Severe Storm	883	11/9-12/20/1990	Not Available
Flooding, Severe Storm	852	1/6-1/14/1990	Not Available
Severe Storms, Flooding	784	11/22-11/29/1986	Not Available
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Not Available
Severe Storms, Mudslides, Flooding	545	12/10/1977	Not Available
Severe Storms, Flooding	492	12/13/1975	Not Available

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Snowmelt, Flooding	414	1/25/1974	Not Available
Severe Storms, Flooding	322	2/01/1972	Not Available
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	Not Available
Heavy Rains and Flooding	185	12/29/1964	Not Available

7.6.2 Hazard Risk Ranking

Table 7-12 and Table 7-13 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 7-12. Hazard Risk Ranking – City Limits.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	36	High
2	Flood	18	Medium
3	Severe Weather	18	Medium
4	Landslide	12	Low
5	Wildfire	0	Low
6	Avalanche	0	Low
7	Dam Failure	0	Low
8	Volcano	0	Low

Table 7-13. Hazard Risk Ranking – UGA.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	36	High
2	Flood	18	Medium
3	Severe Weather	18	Medium
4	Landslide	12	Low
5	Wildfire	0	Low
6	Avalanche	0	Low
7	Dam Failure	0	Low
8	Volcano	0	Low

7.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

7.7 Status of Previous Plan Actions

Table 7-14 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 7-14. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Storm drain maintenance *Comment:*	X			
Seismic retrofitting *Comment:*			X	WIN-1
Slope erosion Geotech *Comment:*			X	WIN-7
Assess building for integrity to withstand earthquake (City Hall, Museum, Library, Community Buildings, Sewer Plant, Wellheads, Public Works Shop) *Comment:*			X	WIN-1
Assess revetment dike (Sewer Plant) *Comment:* None	X			
Assess perimeter for landslide (Library, City Hall, Museum) *Comment:* None	X			
Continue to enforce the flood ordinances and building codes to reduce flood damages *Comment:* WMC Chapter 15.25			X	WIN-4
Continue to enforce the flood ordinance which is based on NFIP model *Comment:* WMC Chapter 15-25			X	WIN-4

7.8 Hazard Mitigation Action Plan

Table 7-15 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 7-16 identifies the priority for each action.

Table 7-15. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Earthquake, Flood, Severe Weather, Wildfire					
New and Existing	1, 5, 6	Winlock Public Works	Winlock Community Development	High	HMGP, BRIC, FMA	Long Term
Action WIN-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community, including 2011 Buildable Lan Inventory & Buildout Analysis.						
Hazards Mitigated:	Earthquake, Flood, Severe Weather, Wildfire, Avalanche, Dam Failure, Landslide, Volcano					
Existing	1, 2, 6	Winlock Community Development	Winlock Public Works	Low	Staff Time, General Funds	Long Term
Action WIN-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Earthquake, Flood, Severe Weather, Wildfire, Avalanche, Dam Failure, Landslide, Volcano					
Existing	2, 3	City of Winlock Community Development	None	Low	Staff Time, General Funds	Long Term
Action WIN-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Flood, Severe Weather, Dam Failure, Landslide					
Existing	1, 2	City of Winlock Community Development	None	Low	Staff Time, General Funds	Long Term
Action WIN-5—Identify and pursue strategies to increase adaptive capacity to climate change.						
Hazards Mitigated:	Flood, Severe Weather, Wildfire, Avalanche, Dam Failure, Landslide					
New	2, 3	City of Winlock Community Development	None	Low	Staff Time, General Funds	On-going

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-6—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including generators for the wells.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New	1, 5, 6	City of Winlock Public Works	None	Low	W/S Cap Imp Fund	Medium Term
Action WIN-7—Conduct soil and land studies in hazard-prone areas, to help lessen or mitigate potential impacts of hazards.						
Hazards Mitigated:	Earthquake, Flood, Severe Weather, Avalanche, Landslide					
New	1, 5, 6	City of Winlock Public Works	Winlock Community Development	High	HMGP, BRIC, FMA	Long-term

Table 7-16. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Low	Medium
2	3	Low	Low	Yes	No	Yes	High	Low
3	2	Low	Low	Yes	No	Yes	High	Low
4	2	Low	Low	Yes	No	Yes	High	Low
5	2	Low	Low	Yes	No	Yes	Low	Low
6	3	Medium	Low	Yes	Yes	No	Medium	High
7	3	Medium	High	No	Yes	No	Medium	High

7.9 Information Sources Used for This Annex

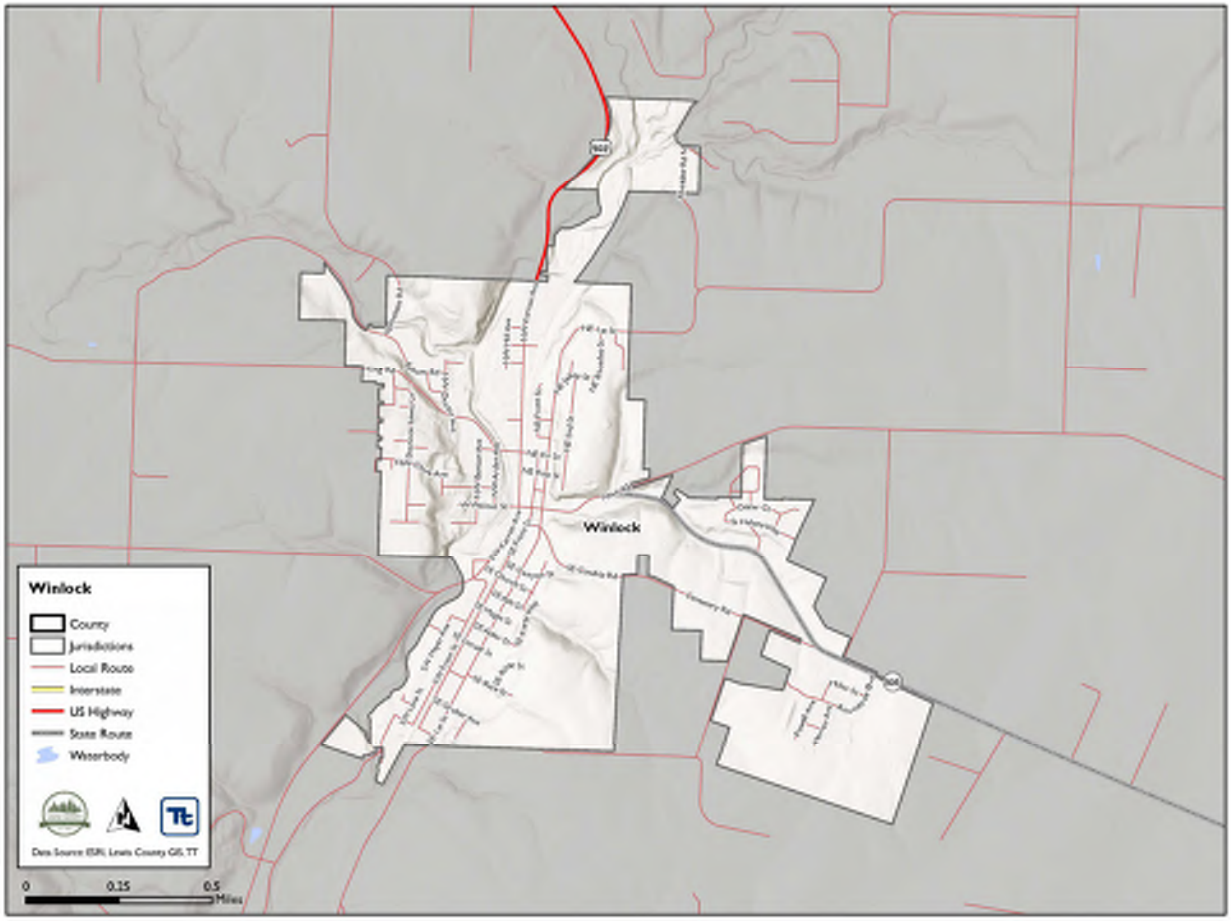
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

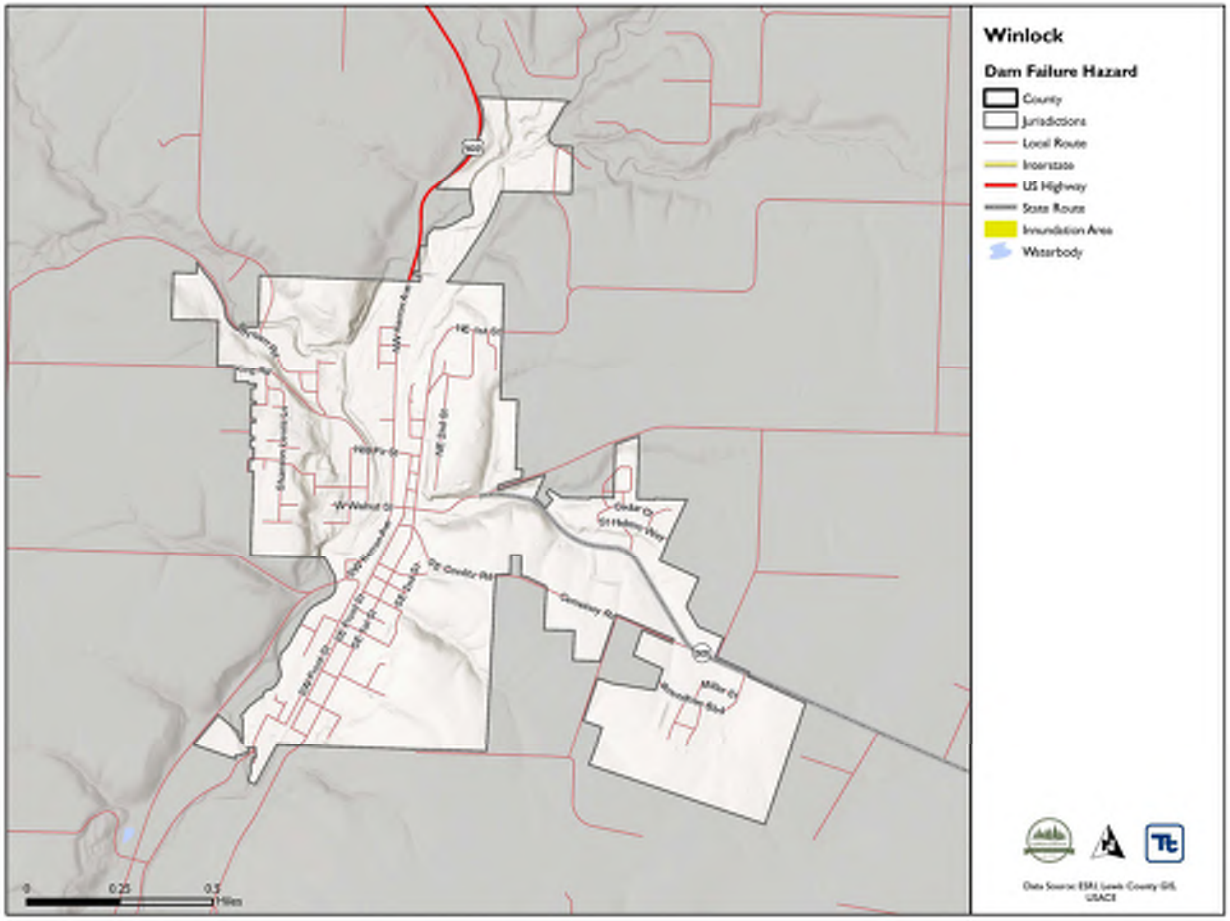
- **City of Winlock Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Winlock Flood Damage Prevention Ordinance (WMC 15.25)**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **City of Winlock Shoreline Master Plan –** flood and stormwater
- **City of Winlock Comprehensive Plan -** land use and planning
- **City of Winlock Buildable Land Inventory & Future Buildout Analysis (2011)** – lands inventory

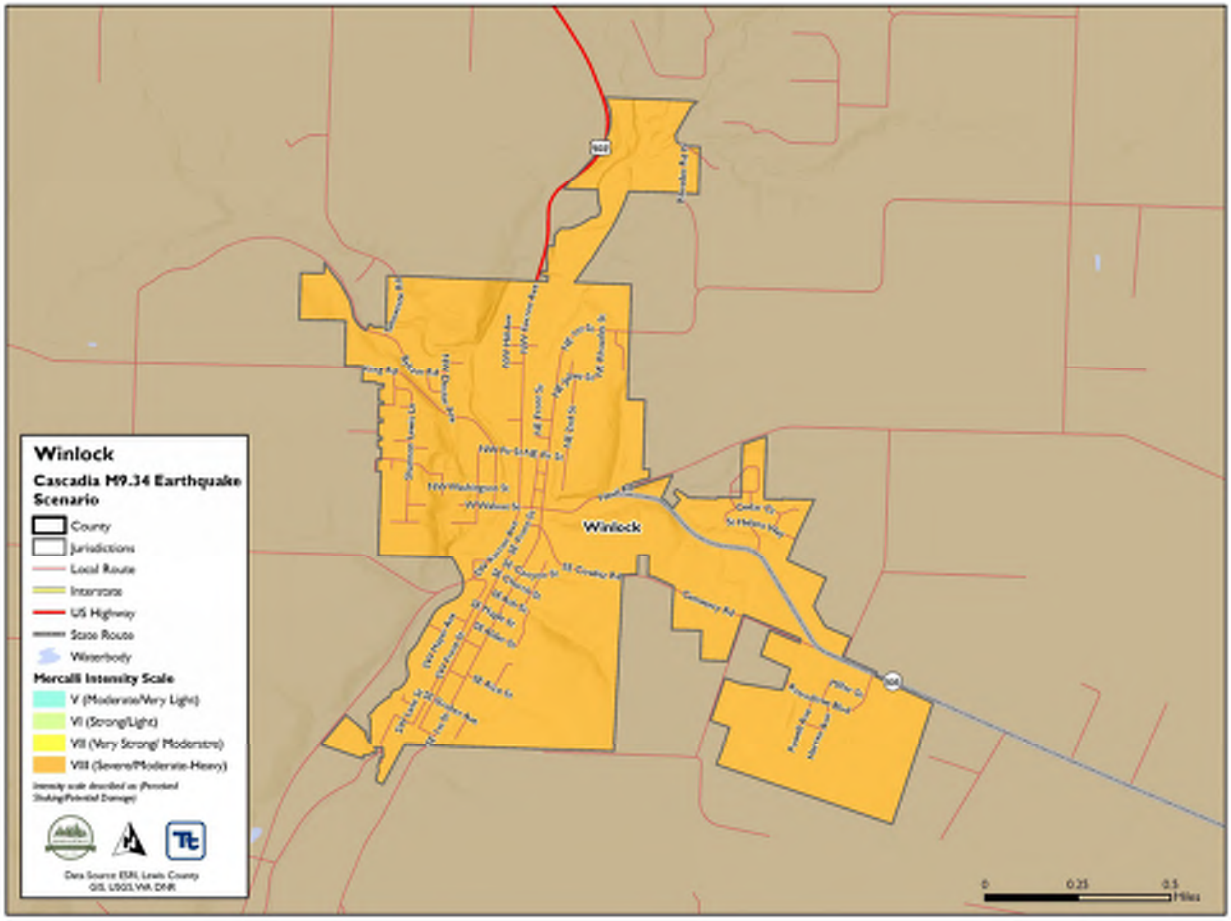
The following outside resources and references were reviewed:

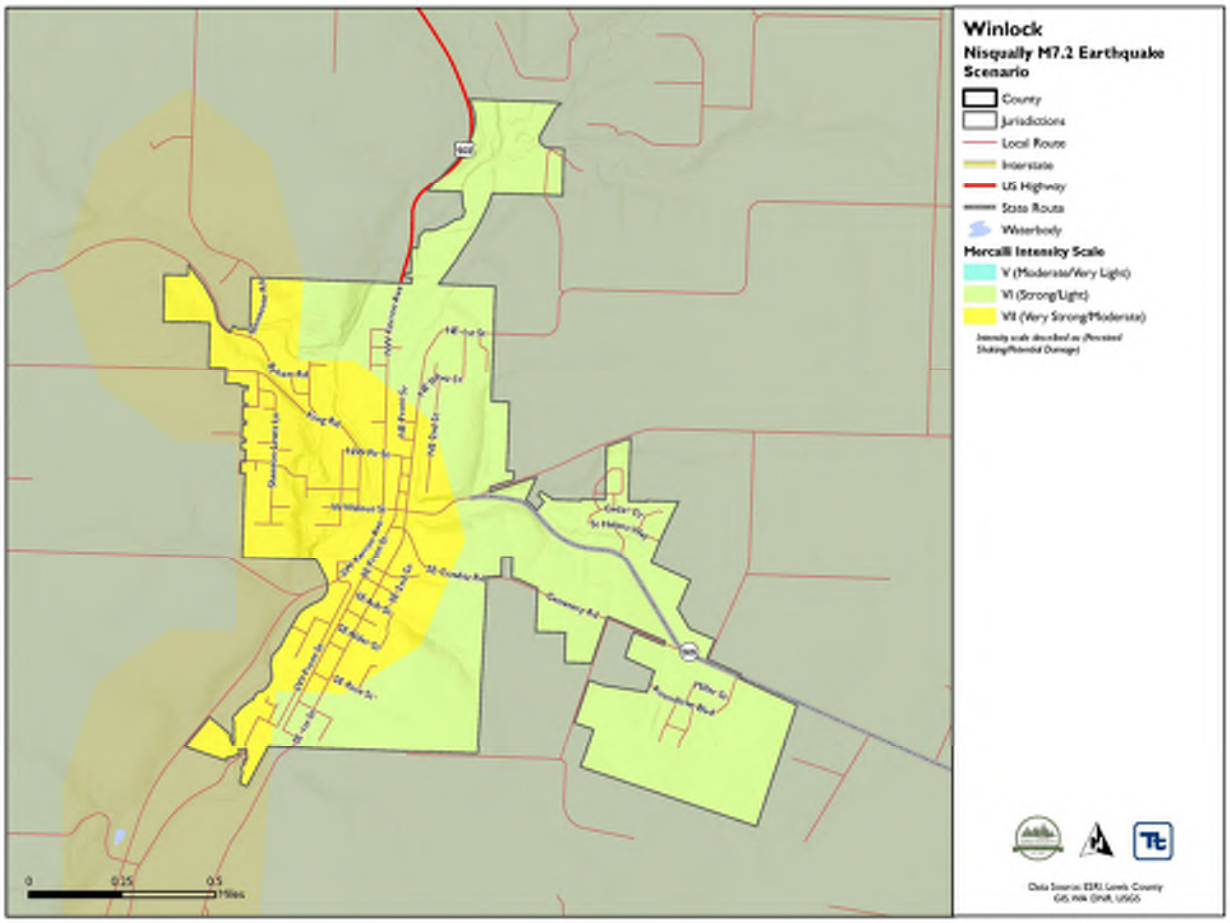
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

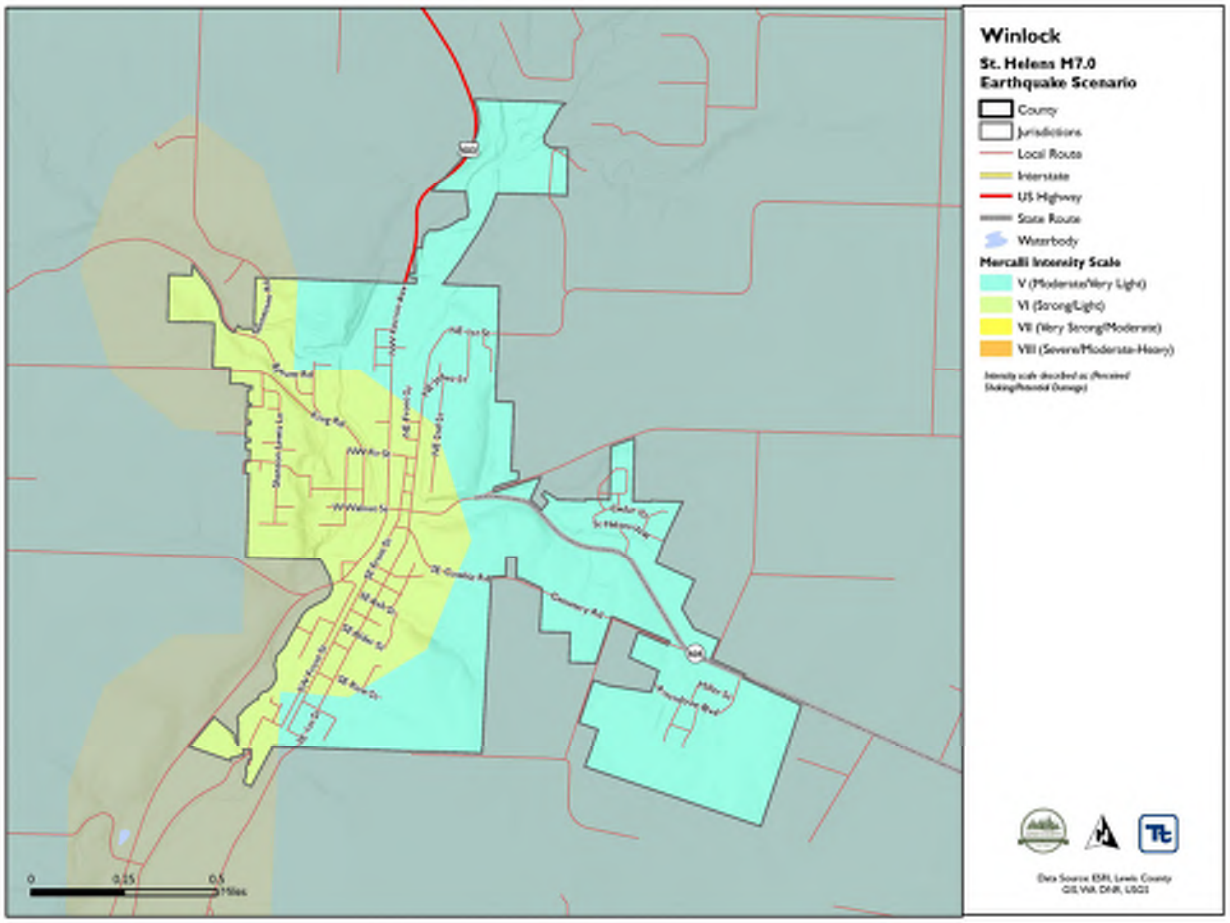
7.10 Hazard Maps

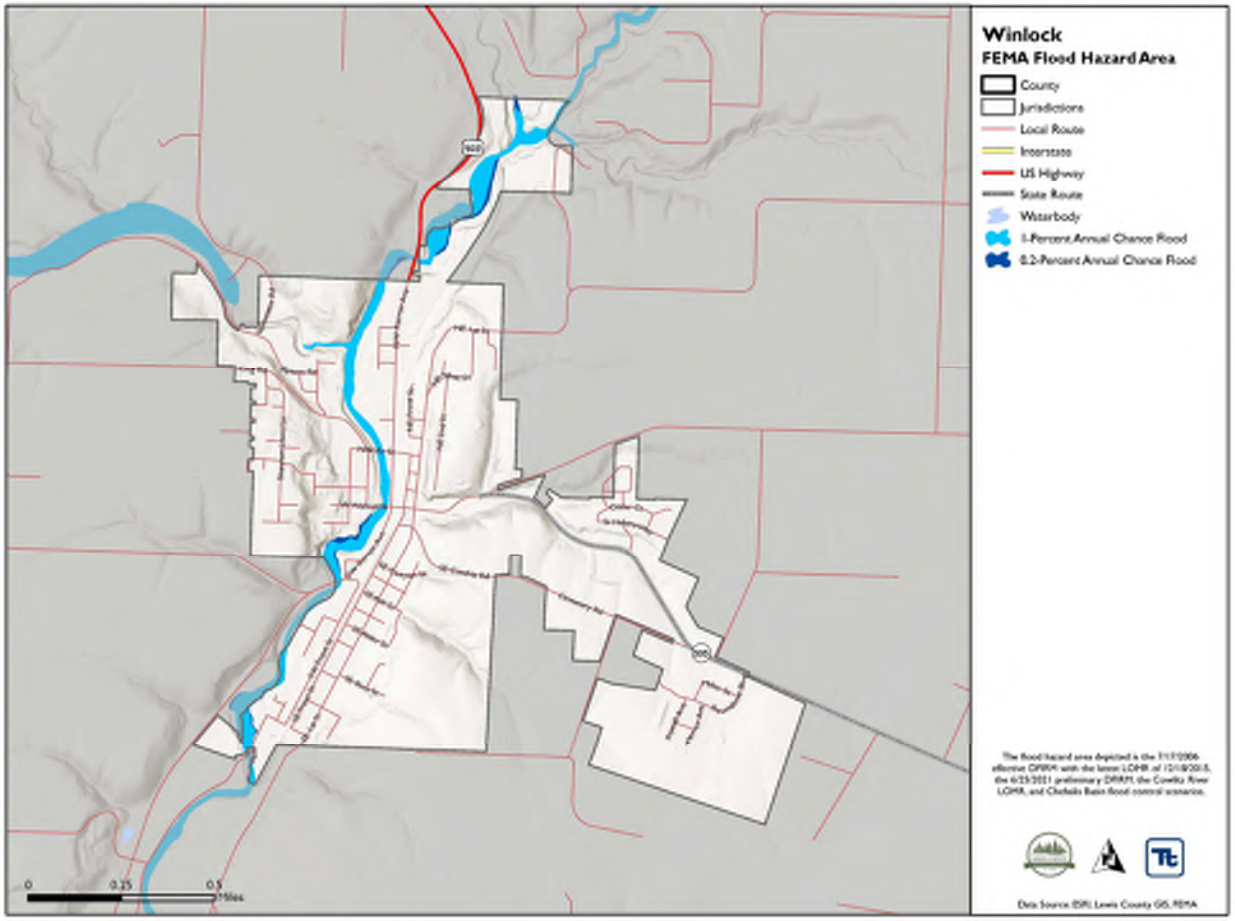

Winlock
Winlock
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
0
0.25
0.5
Miles

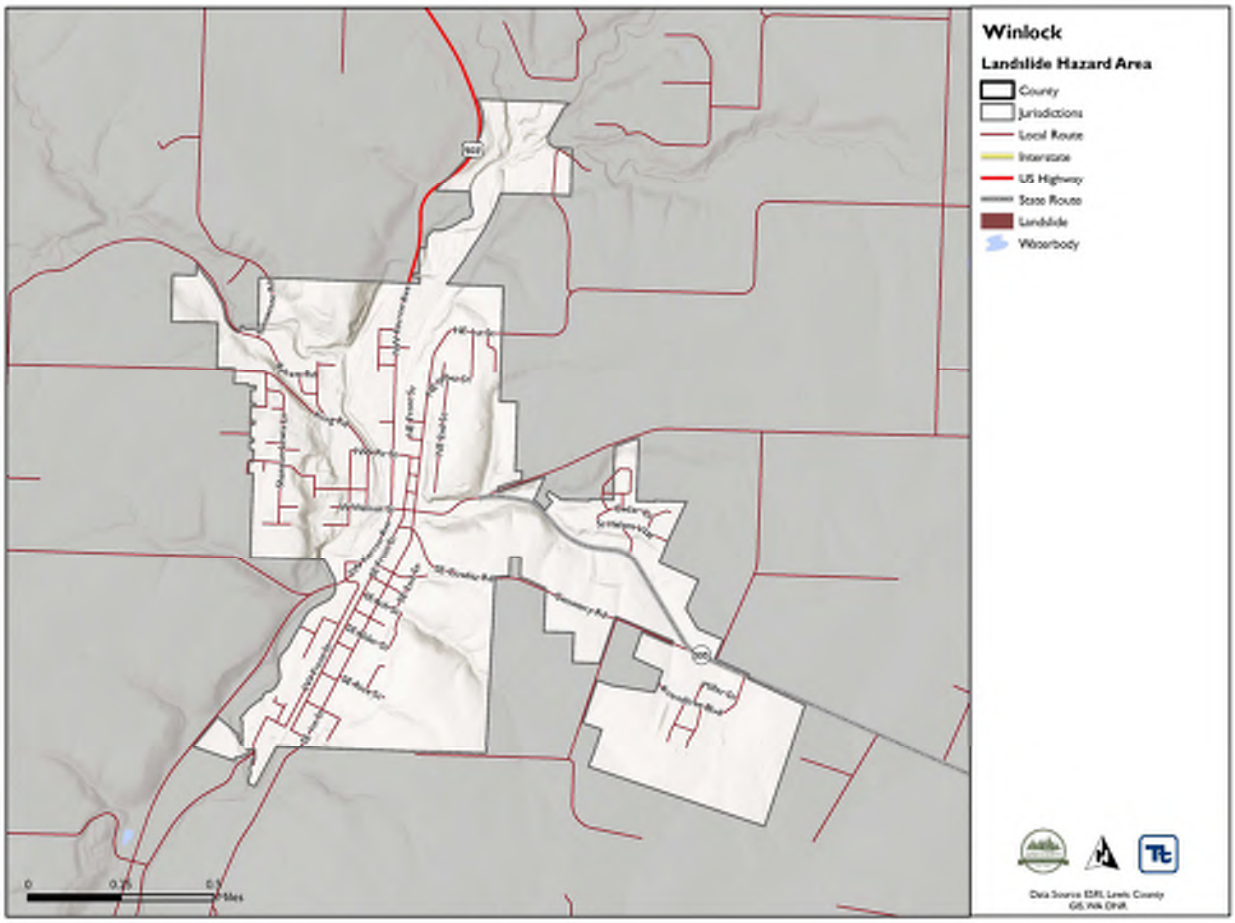

Winlock
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
0
0.25
0.5
Miles
Data Source: ESRI, Lewis County GIS, USACE

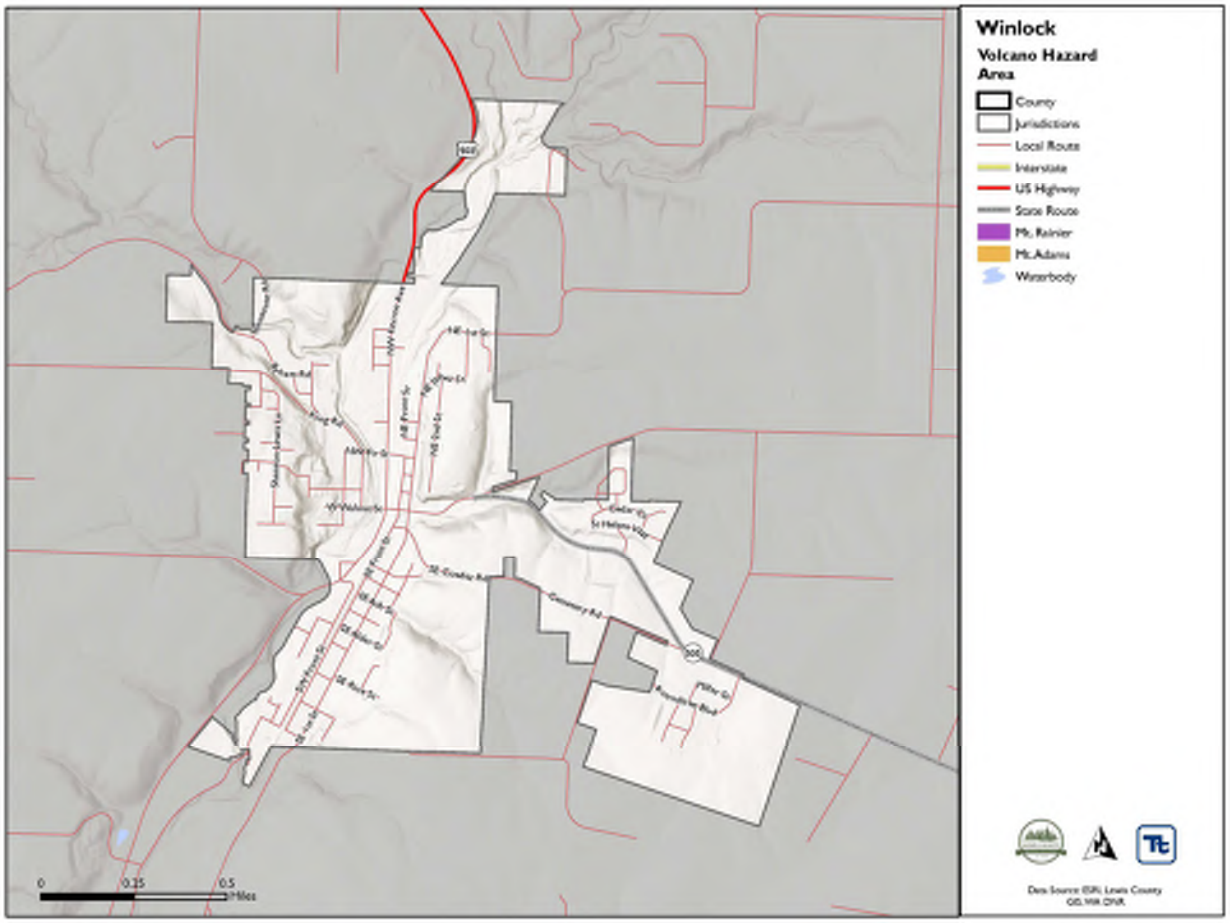

Winlock
Cascadia M9.34 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Winlock
0
0.25
0.5
Miles


Winlock
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0
0.25
0.5
Miles


Winlock
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
0
0.25
0.5
Miles


Winlock
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent-Annual-Chance Flood
0.2-Percent-Annual-Chance Flood
0
0.25
0.5
Miles
Data Source: ESRI, Lewis County GIS, FEMA


Winlock
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0
0.25
0.5
Miles


Winlock
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0
0.25
0.5
Miles

8.0 CITY OF NAPAVINE

8.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Teri Lopez, Administrative Assistant
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Napavine, WA 98565
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e-mail Address: tlopez@cityofnapavine.com

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E-mail: kwilliams@cityofnapavine.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 8-1.

Table 8-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Bryan Morris	Director, Public Works/Community Development
Teri Lopez	Administrative Assistant, Public Works/Community Dev.
Katie Williams	Executive Assistant, Public Works/Community Dev.

8.2 Jurisdiction Profile

8.2.1 Location and Features

The City of Napavine is the third most populated city in Lewis County with a population of 1,888. The city's downtown and amenities lie on the west side of the freeway which includes farms, businesses, and a few developed subdivisions. According to the United States Census Bureau, the city has a total area of 2.39 square miles.

The City of Napavine is characterized by a broad floodplain and low terraces surrounded by upland valleys of low to moderate relief that have broad, rounded ridges. The elevation of the city is 459 feet above sea level. The Chehalis River winds its way through the valley in which the city resides, and is there joined by a tributary, the Newaukum River. Both rivers are prone to flooding during periods of abnormally heavy or persistent rain, and the lowlands from the freeway westward are particularly susceptible to inundation.

8.2.2 History

The City of Napavine was incorporated in 1913, an old remodeled church became its first town hall. Settlers began arriving in the early 1850s. Napavine began as a logging and sawmill town. The first sawmill was financed by the Northern Pacific Railroad for railroad tie production and was located on the south side of town. The rails were laid in 1873. Napavine grew to include six sawmills, a shingle mill, two column factories, a general repair shop, two shoe shops and a blacksmith. In addition to manufacturing, the city included four general stores, two meat markets, two saloons, a drugstore, a doctor, two hotels, one livery and feed barn, a real estate office and a carpenter.

From 1900 to 1925 population reached a peak of 1,500 with nearly the same number of people living closer to the mills located just outside of town. After World War II, plans for the town's first water system were initiated. A 100-foot well was drilled in 1955 to serve local businesses, the schools and the 80 homes in town. In 1967 the 150-foot water tower was built.
When the first Napavine Comprehensive Plan was prepared in 1997, there were two restaurants, two markets, a tavern, feed store, post office, fire station, and city hall in the center of town. The schools and several smaller businesses were located throughout the community.

8.2.3 Governing Body Format

The City of Napavine is governed by a five-member city council. The City consists of six departments: Community Development, Public Works, Police, Municipal Court, Treasurer and the City Clerk's Office. The City currently employs a total of 17 employees (full-time equivalent).

The City Council assumes responsibility for the adoption of this plan; the City Mayor will oversee its implementation.

8.3 Current Trends

8.3.1 Population

According to Washington OFM, the population of Napavine as of April 2022 was 1,955. Since 2020, the population has grown at an average annual rate of 3.5% percent.

8.3.2 Development

The City of Napavine anticipates substantial growth, above 3%, to continue with steady infill development. The City of Napavine is currently home for 1,888 people and is comprised of around 926 acres. Residential uses make up 45% of the city land use, 37% single-family, 7% mobile-home, 1% multi-family using 314 acres of land. There are 59 acres of commercial land (9% of total), 38 acres of industrial land (6% of total). Vacant lands make up a large portion of the total acreage with around 14% as residential, 17% as commercial, and 3% as industrial. However, most of these parcels are scattered lots or contain lands with some environmental constraints such as wetlands or steep-slopes.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 8-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 8-2. Recent and Expected Future Development Trends.

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	No
Is your jurisdiction expected to annex any areas during the performance period of this plan?	Yes

Criterion							Response
If yes, describe land areas and dominant uses. Koontz Road East to Military West to Forest Napavine Road. *If yes, who currently has permitting authority over these areas?* Lewis County							
Are any areas targeted for development or major redevelopment in the next five years?							Yes
If yes, briefly describe, including whether any of the areas are in known hazard risk areas.	Expand Commercial, not in Hazard						
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	**Single Family**	14	8	9	10	18	7
	Multi-Family	0	1	0	0	7	1
	Other	2	_0	1	1	1	1
	Total	16	9	10	11	26	9
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: None • Landslide: None • High Liquefaction Areas: None • Wildfire Risk Areas: None						
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	The Land Capacity & Needs Analysis conducted to complete the 2016 Comp plan reflected the following: 1.) The City's residential use covers approximately 582 acres. 2.) The City's commercial use covers a 491-acre area. 3.) The City currently has 731 acres, which are either designated or developed for industrial use.						

8.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 8-3.
- Development and permitting capabilities are presented in Table 8-4.
- An assessment of fiscal capabilities is presented in Table 8-5.
- An assessment of administrative and technical capabilities is presented in Table 8-6.
- An assessment of education and outreach capabilities is presented in Table 8-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 8-8.
- Classifications under various community mitigation programs are presented in Table 8-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 8-10.

Table 8-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes	No	No	Yes
Comment: Title 15 – Ord. No. 615, § 1, 10-13-20; RCW Chapter 19.27; WA State Building Code				
Zoning Code	Yes	No	Yes	Yes
Comment: Title 17 – Ord. 163 § 1.1, 1989				
Subdivisions	Yes	No	No	Yes
Comment: Title 16 – Ord. 118 § 1.01, 1980				
Stormwater Management	Yes	No	Yes	Yes
Comment: Title 16 – Ord. 418 § 1 (part), 2006; RCW 36.89 & RCW 77.55.161; WA State Department of Ecology				
Post-Disaster Recovery	Yes	Yes	No	Yes
Comment: Hazard Mitigation Plan, adopted 2016				
Real Estate Disclosure	Yes	No	Yes	Yes
Comment: Part of FEMA/NFIP req.				
Growth Management	Yes	No	Yes	Yes
Comment: Title 16 – Ord. 307 § 2, 2000; RCW 36.70A; WA State Department of Commerce				
Site Plan Review	Yes	No	No	Yes
Comment: Title 16 – Ord. 418 § 1 (part), 2006				
Environmental Protection	Yes	No	Yes	Yes
Comment: Title 18 – Ord. 145 §§ 1, 1984; WA State Department of Ecology				
Flood Damage Prevention	Yes	No	Yes	Yes
Comment: Title 15 – Ord. 410 (part), 2006; WA State Department of Ecology				
Emergency Management	Yes	Yes	Yes	Yes
Comment: Lewis County Emergency Management				
Climate Change	No	No	No	
Comment: None				
Other	No	No	No	No
Comment: None				
Planning Documents				
Comprehensive Plan	Yes	No	Yes	Yes
Comment: Updated in 2016; next update due 2025; Ord. 564 §§ 08, 2017; WA State Department of Commerce				
Capital Facilities Plan	Yes	No	Yes	Yes
How often is the plan updated? Annually				
Comment: Adopted in 1997				
Disaster Debris Management Plan	Yes	Yes	No	Yes
Comment: Lewis County				
Floodplain or Watershed Plan	Yes	No	Yes	Yes
Comment: Critical Areas Ord. 651 – 2023				
Stormwater Plan	Yes	No	Yes	Yes
Comment: Stormwater Management Manual for the Puget Sound Basin				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Water Systems Plan	Yes	No	Yes	Yes
Comment: Approved by Office of Drinking Water 12/2016				
Habitat Conservation Plan	Yes	No	Yes	Yes
Comment: Critical Areas Ord. 651 – 2023				
Economic Development Plan	Yes	No	Yes	Yes
Comment: Comprehensive Plan Ord. 564 – 2017				
Shoreline Management Plan	Yes	No	Yes	Yes
Comment: Critical Areas Ord. 651 – 2023				
Community Wildfire Protection Plan	No	Yes	No	Yes
Comment: Lewis County Fire District #5				
Forest Management Plan	No	No	No	N/A
Comment: None				
Climate Action Plan	No	No	No	N/A
Comment: None				
Comprehensive Emergency Management Plan	Yes	No	Yes	Yes
Comment: Adopted in 2004, updated in 2008				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	No	No	N/A
Comment: None				
Post-Disaster Recovery Plan	No	No	No	N/A
Comment: None				
Continuity of Operations Plan	No	No	No	N/A
Comment: None				
Public Health Plan	No	Yes	Yes	Yes
Comment: Lewis County				
Other	No	No	No	N/A
Comment: None				

Table 8-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If no, who does? If yes, which department? Community Development	
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	Yes

Table 8-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service *If yes, specify:* Water, Sewer	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 8-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:* Community Development, Director	Yes
Engineers or professionals trained in building or infrastructure construction practices *If yes, Department/Position:* Community Development, Director	Yes
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:* Community Development, Director	Yes
Staff with training in benefit/cost analysis *If yes, Department/Position:* None	No
Surveyors *If yes, Department/Position:* None	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:* None	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:* None	No
Emergency manager *If yes, Department/Position:* Police Chief	Yes
Grant writers *If yes, Department/Position:* None	No

Table 8-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Enter Response	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Enter Response	No

Criterion	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Enter Response	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* The City of Napavine Webpage and LC Emergency Management	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alerts	Yes

Table 8-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (Department/Position)	Community Development, Director
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* Chapter 15.12 – Ordinance No. 410	2006
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	Enter Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.* N/A	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.* N/A	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes, what is the effective date?* November 1981	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.* N/A	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?* N/A	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?* No	No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* $850,000 *What is the premium in force?* $1,879	2

Criterion	Response
How many total loss claims have been filed in your jurisdiction?[a]	0
What were the total payments for losses? $0	
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance	
Describe: During or after an event, the Floodplain Administrator will perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations.	

a. According to FEMA statistics as of January 18, 2024

Table 8-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code: 53041	Yes		N/A
DUNS #: 169174711	Yes		N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 8-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

8.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

8.5.1 Existing Intergration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Shoreline Master Plan—**stormwater, shoreline, wetlands, floodplain, critical areas
- **Comprehensive Plan—**land use, facilities, utilities, transportation, planning, economic development
- **Building Codes —**WMC 15.05

8.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Water System Plan –** water system management

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

8.6 Risk Assessment

8.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 8-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 8-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$ N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$ N/A
Flooding and Mudslides	4635	11/13-11/15/2021	$ N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$ N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$ N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	$ N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	$ N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$ N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$ N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$ N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$ N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	$ N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$ N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$ N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$ N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$ N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$ N/A
Earthquake	1361	2/28-3/16/2001	$ N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$ N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	$ N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	$ N/A
Severe Storm, High Winds	981	1/20-1/21/1993	$ N/A
High Tides, Severe Storm	896	12/20-12/31/1990	$ N/A
Flooding, Severe Storm	883	11/9-12/20/1990	$ N/A
Flooding, Severe Storm	852	1/6-1/14/1990	$ N/A
Severe Storms, Flooding	784	11/22-11/29/1986	$ N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$ N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	$ N/A
Severe Storms, Flooding	492	12/13/1975	$ N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$ N/A
Severe Storms, Flooding	322	2/01/1972	$ N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$ N/A
Heavy Rains and Flooding	185	12/29/1964	$ N/A

8.6.2 Hazard Risk Ranking

Table 8-12 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 8-12. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	34	High
2	Severe Weather	18	Medium
3	Avalanche	0	Low
4	Dam Failure	0	Low
5	Flood	0	Low
6	Landslide	0	Low
7	Volcano	0	Low
8	Wildfire	0	Low

8.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- None

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None.

8.7 Status of Previous Plan Actions

Table 8-13 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 8-13. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue to enforce the CAO's *Comment:* Ongoing	No		X	#6
Continue to enforce Shorelines' Management Plan *Comment:* Ongoing	No		X	#7
Assess building and infrastructure for structural integrity (Booster Pump Station) *Comment:* Ongoing	No		X	#8
Assess building for structural damage (City Hall) *Comment:* Ongoing	No		X	#9
Assess structure for integral damage (Rush Road Bridge) *Comment:* Ongoing	No		X	#10
Assess buildings and infrastructure for damage (Sewer Pump Stations #1-5) *Comment:* Ongoing	No		X	#11
Assess buildings and infrastructure for damage (Water Wells #1-5) *Comment:* Ongoing	No		X	#12

8.8 Hazard Mitigation Action Plan

Table 8-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 8-15 identifies the priority for each action.

Table 8-14. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action NAP-1—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community.						
Hazards Mitigated:	Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide, Volcano, Wildfire					
New and Existing	2, 3, 6	City of Napavine Community Development		Low	Staff Time, General Funds	Short-term
Action NAP-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide, Volcano, Wildfire					
New and Existing	1, 2, 3, 4, 6	Lewis County Administration	City of Napavine	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action NAP-3—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. *Hazards Mitigated:* Flood, Severe Weather, Dam Failure, Landslide						
New and Existing	3, 4	City of Napavine Community Development		Low	Staff Time, General Funds	Short-term
Action NAP-4—Identify and pursue strategies to increase adaptive capacity to climate change, including but not limited to the following: • Maintain/Restore Wetlands • Stormwater Management Logistics *Hazards Mitigated:* Flood, Severe Weather, Dam Failure, Landslide						
New and Existing	1, 2, 3	City of Napavine Community Development	Lewis County, WA ST Dept. of Ecology	Low	Staff Time, General Funds	Short-term
Action NAP-5—Purchase generators for critical facilities and infrastructure that lack adequate backup power. *Hazards Mitigated:* Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide, Volcano, Wildfire						
Existing	1, 2	City of Napavine Public Works		High	Staff Time, General Funds, HMGP, BRIC	Medium-term
Action NAP-6— Continue to enforce the Critical Areas Ordinance *Hazards Mitigated:* Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide, Volcano, Wildfire						
New and Existing	1, 2, 3	City of Napavine Community Development	WA ST Dept. of Ecology	Low	Staff Time, General Funds	Short-term
Action NAP-7— Continue to enforce Shorelines Master Program *Hazards Mitigated:* Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide						
New and Existing	1, 2, 3	City of Napavine Community Development	WA ST Dept. of Ecology	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action NAP-8— Assess City owned buildings and infrastructure for structural integrity and other vulnerabilities to natural disasters, including Booster Pump Station, City Hall, Rush Road Bridge, Swere Pump Stations 1-5, and Water Wells 1-5. If vulnerabilities are found, mitigate using the most cost-effective methods.						
Hazards Mitigated:	Earthquake, Severe Weather, Avalanche, Dam Failure, Flood, Landslide, Volcano, Wildfire					
Existing	1, 2	City of Napavine Public Works	State agencies, Lewis County EM	Medium-High	Staff Time, General Funds, BRIC, HMGP, FMA	Medium-term to Long-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 8-15. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	Med	Low	Yes	No	Yes	High	Low
2	5	Med	Low	Yes	No	Yes	High	Low
3	2	Med	Low	Yes	No	Yes	High	Low
4	3	Med	Low	Yes	Yes	Yes	High	Low
5	2	High	Low	Yes	Yes	No	Med	High
6	3	Med	Low	Yes	Yes	Yes	High	Low
7	3	Med	Low	Yes	No	Yes	High	Low
8	2	High	High	Yes	Yes	No	Med	High

8.9 Public Outreach

Table 8-16 lists public outreach activities for this jurisdiction.

Table 8-16. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
City Council Meeting	12/12/23	20

8.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

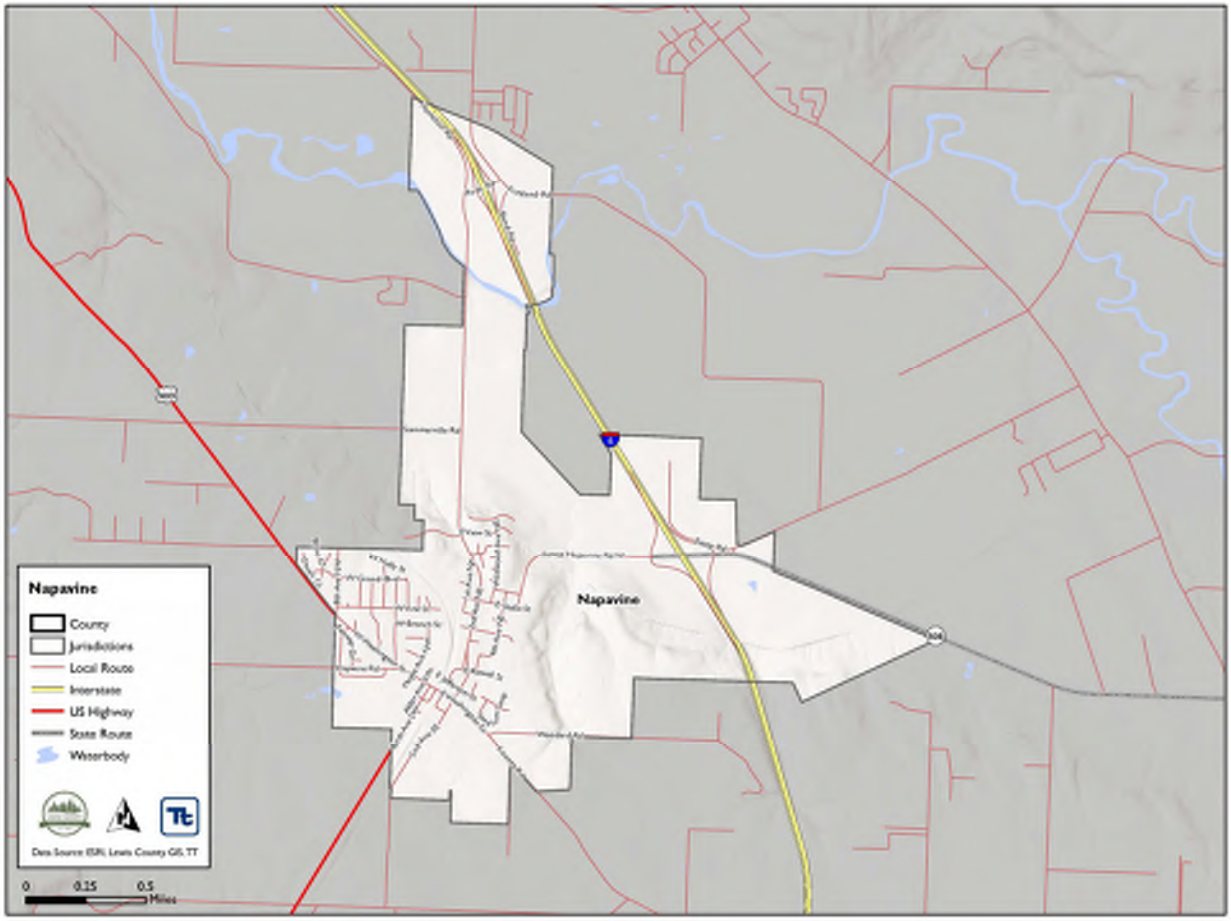
- **City of Napavine Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Napavine Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

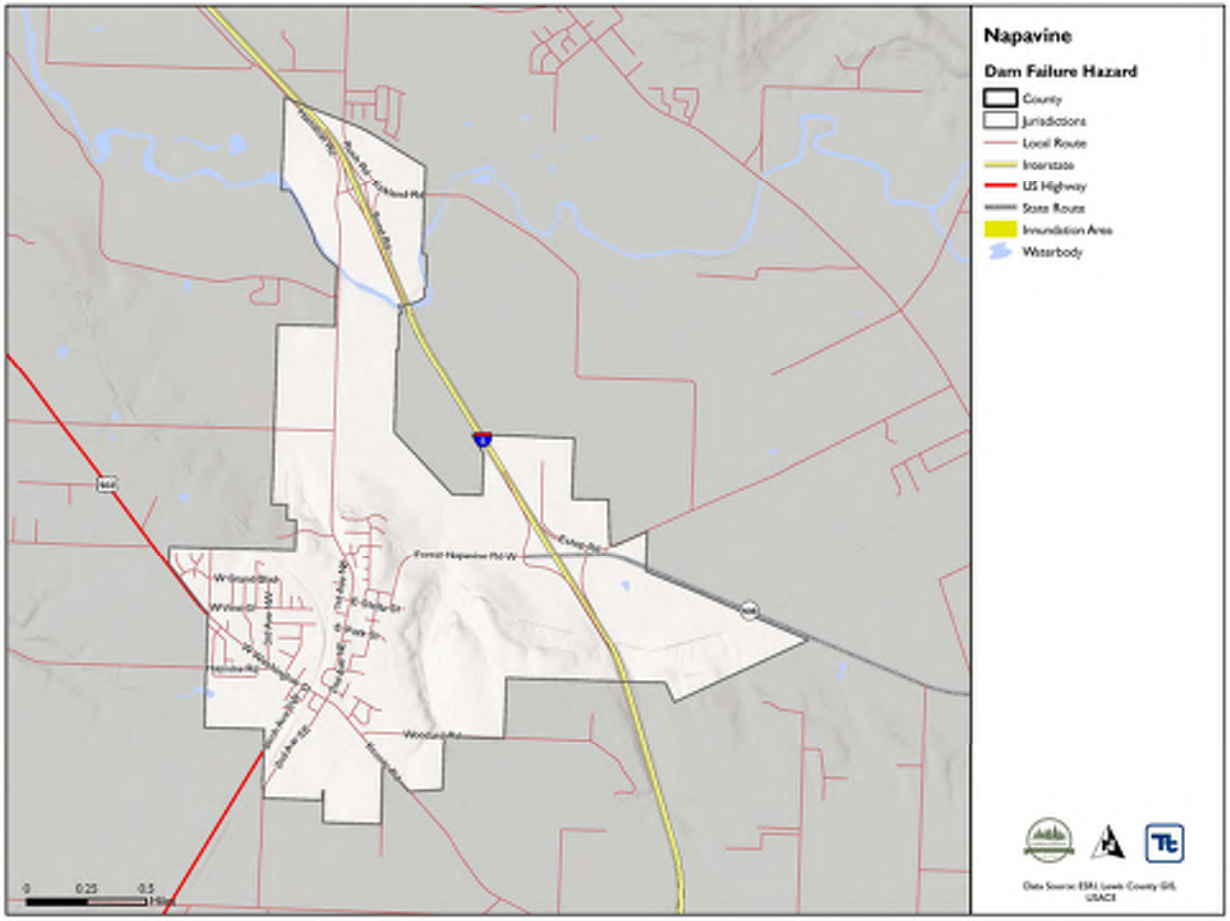
- **City of Napavine Critical Areas Ordinance** – The critical areas ordinance was utilized for supplemental information contained in this annex.
- **City of Napavine Comprehensive Plan** – The Comp Plan was utilized for supplemental information contained in this annex.

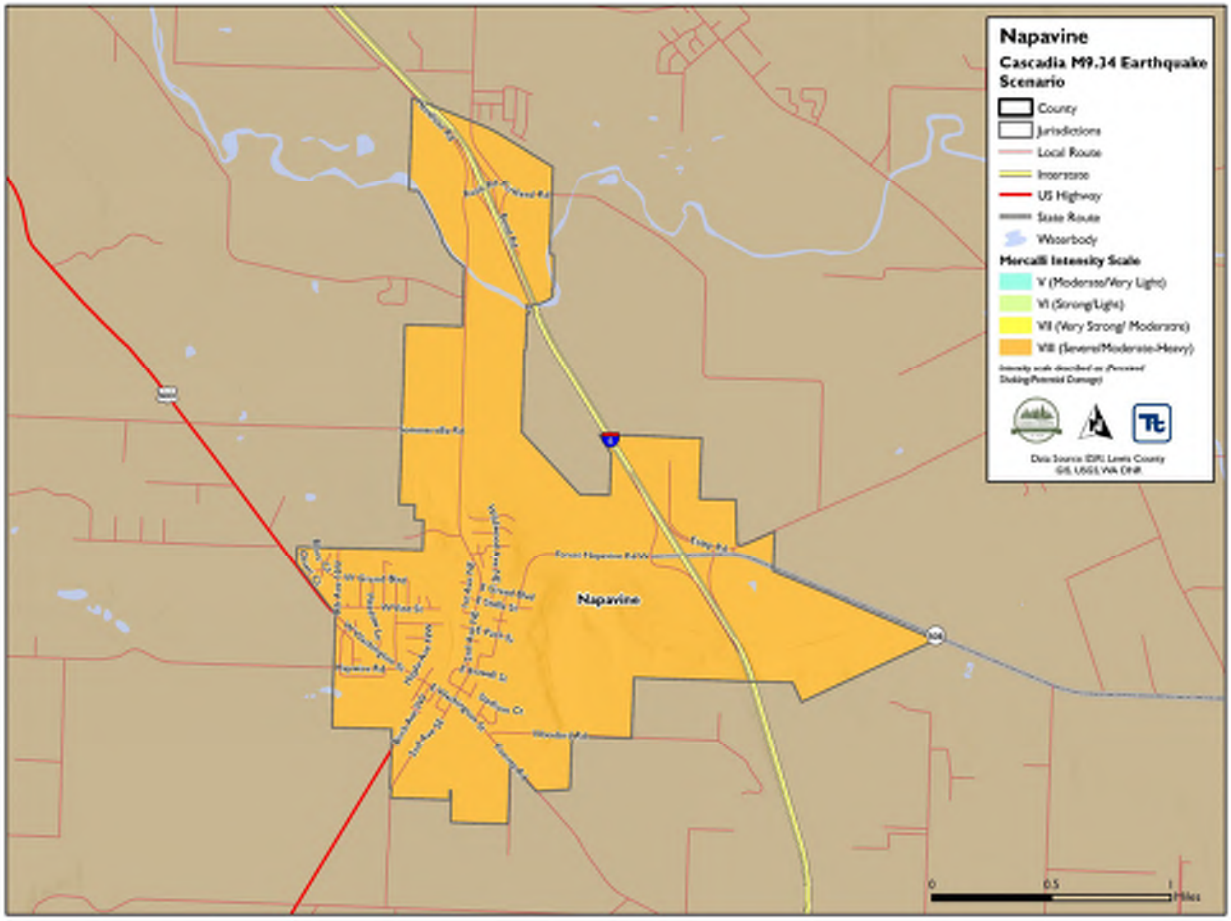
The following outside resources and references were reviewed:

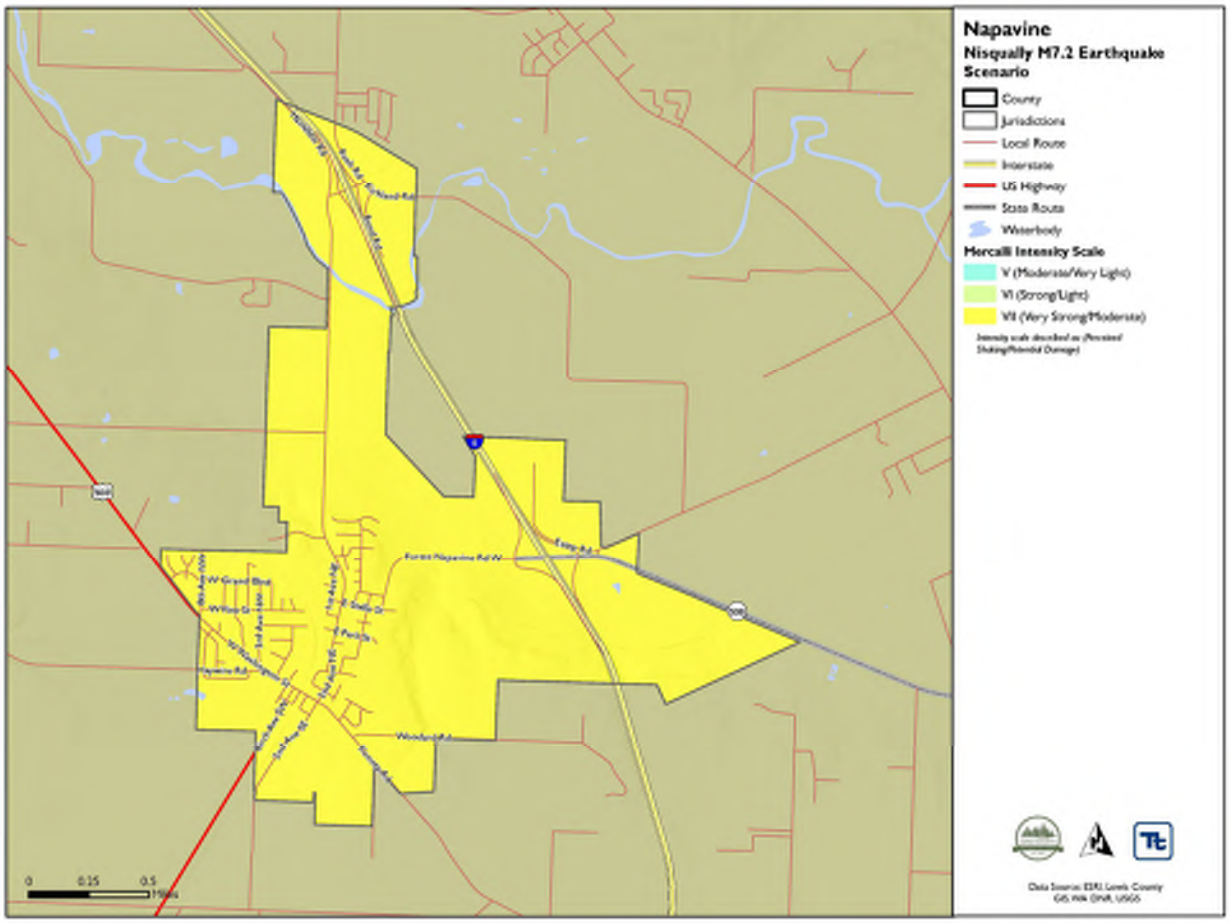
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

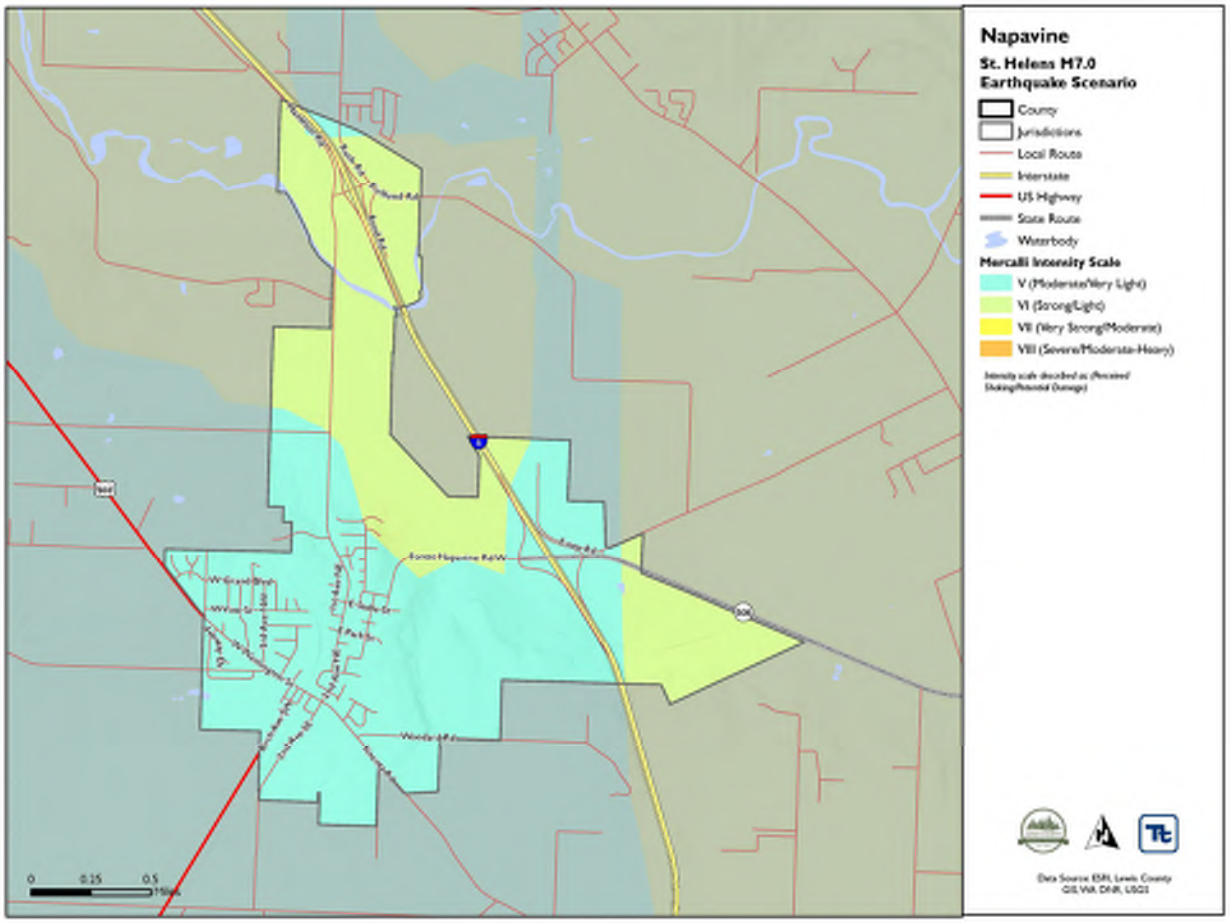
8.11 Hazard Maps

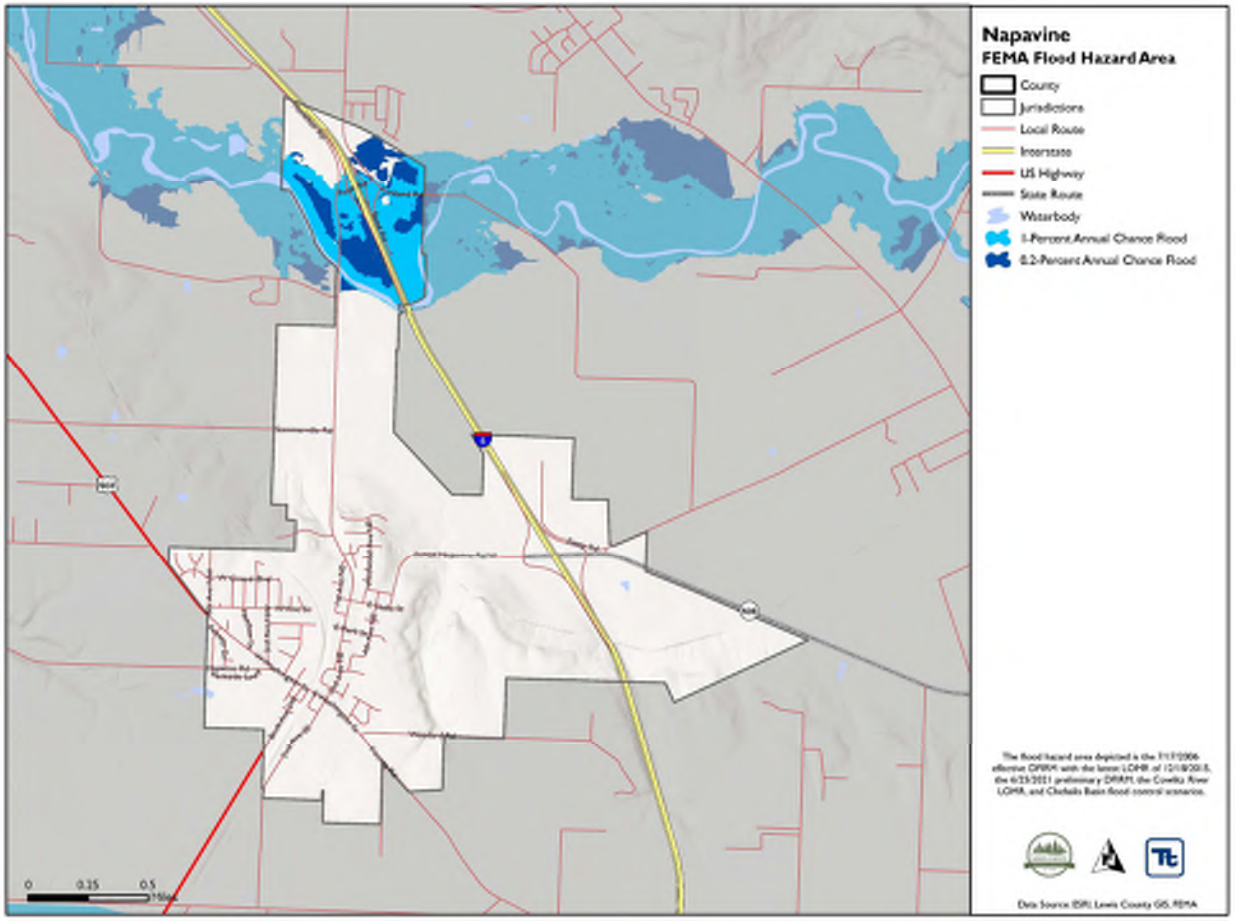

Napavine
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Data Source: ESRI, Lewis County GIS, TT
0
0.25
0.5
Miles
Napavine

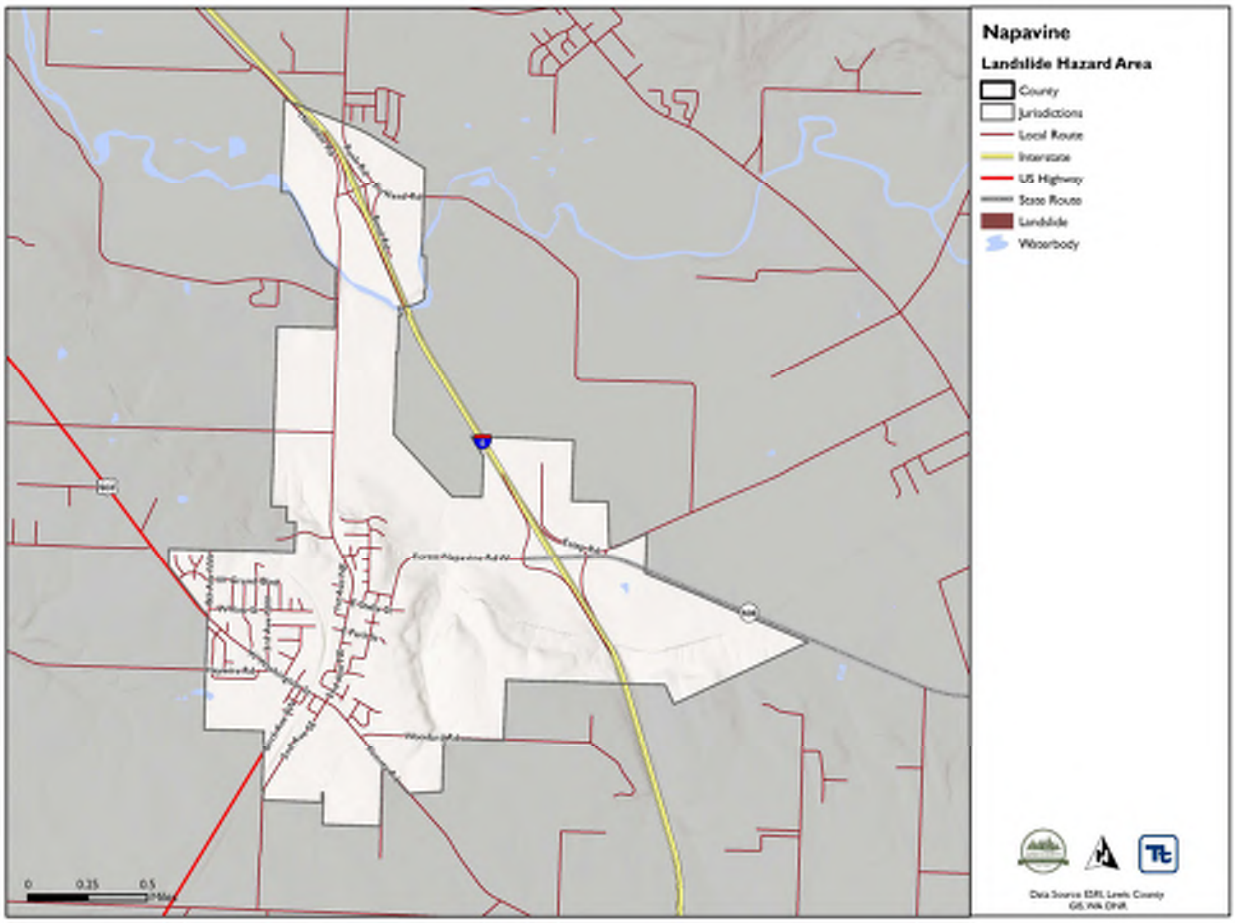

Napavine
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
Data Source: ESRI, Lewis County GIS, USACE
0
0.25
0.5
Miles

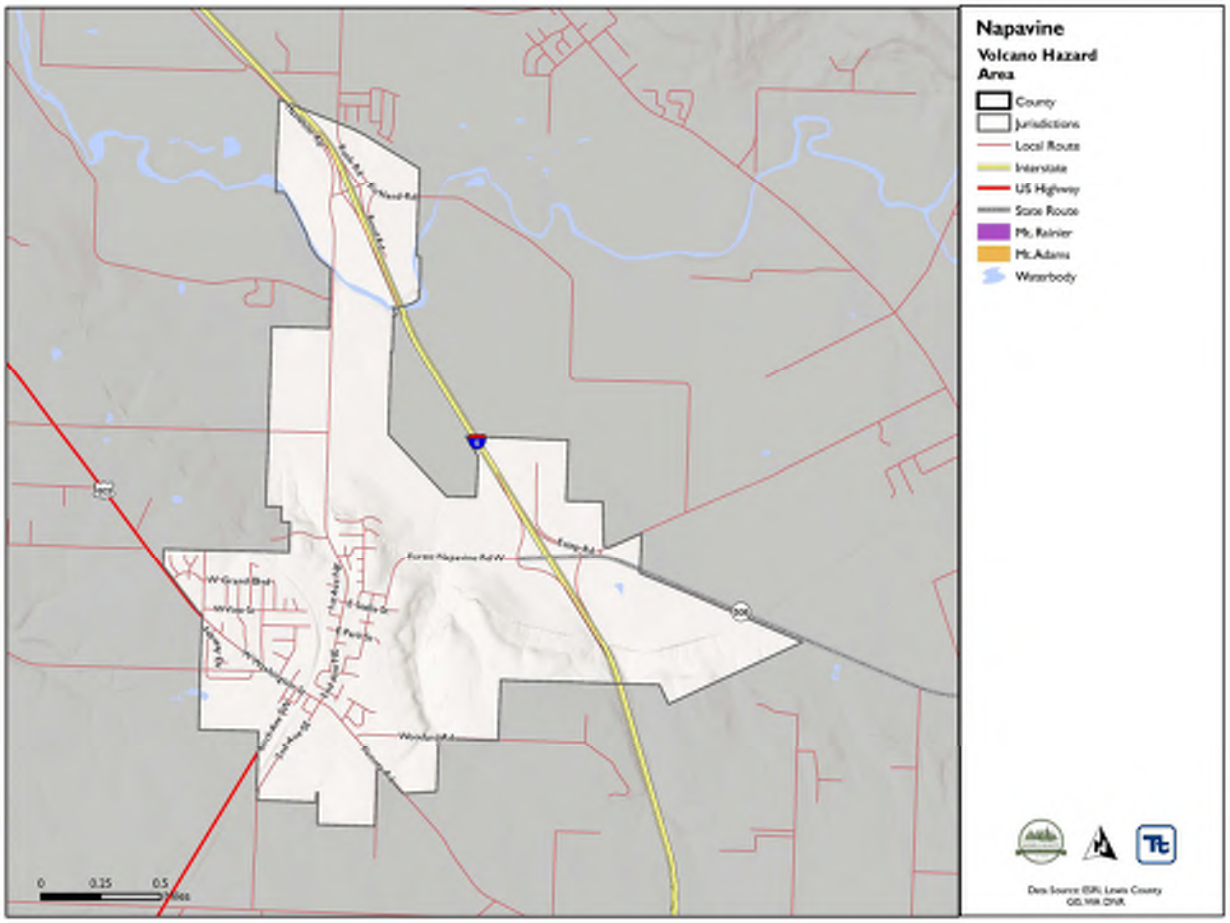

Napavine
Cascadia M9.14 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Napavine
0
0.5
1
Miles


Napavine
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0
0.25
0.5


Napavine
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
0
0.25
0.5
Miles


Napavine
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent Annual Chance Flood
0.2-Percent Annual Chance Flood
0
0.25
0.5


Napavine
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0
0.25
0.5
Miles


Napavine
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0
0.25
0.5

9.0 CITY OF VADER

9.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Lisa Huckleberry, or current Clerk/Treasurer
PO Box 189
Vader, WA 98593
Telephone: 360-295-3222
e-mail Address: cityclerk@vaderwa.org

Alternate Point of Contact
Joe Schey, or current Mayor
PO Box 189
Vader, WA 98593
Telephone: 360-295-3222
e-mail Address: cityclerk@vaderwa.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 9-1.

Table 9-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Joe Schey	Mayor
Lisa Huckleberry	Clerk/Treasurer

9.2 Jurisdiction Profile

9.2.1 Location and Features

The City of Vader is in SW Lewis County with a population of approximately 630 people. The city is located west of Interstate 5 on State Route 506. The City is nestled at the base of a small range of forested hills. On the outskirts of the community are farms, and a few residential subdivisions. From numerous vantage points in the hills just east of town, one can see Mount Rainier, Mount Adams, and Mount St. Helens—weather permitting.

According to the United States Census Bureau, the city has a total area of .9 square miles. The City of Vader is characterized by a broad floodplain and low terraces surrounded by upland valleys of low to moderate relief that have broad, rounded ridges. The Cowlitz River winds its way through the valley in which the city resides. The river is prone to flooding during periods of abnormally heavy or persistent rain.

9.2.2 History

Vader was originally named Little Falls and incorporated as such on January 12, 1906. The name was changed to Sopenah by the Northern Pacific Railway because there was already a Little Falls on their rail lines, Little Falls, Minnesota. The townspeople did not like the new name and petitioned the state legislature to change it to Toronto. A dispute then arose which was resolved by a compromise agreement to name the town after a German resident and military veteran, Martin Vader. The town name was changed to Vader by the legislature on March 25, 1913. Mr. Vader later moved to Florida. It is the birthplace of the novelist and critic Robert Cantwell.

9.2.3 Governing Body Format

The City of Vader is governed by a five-member city council and a mayor. The city has three office clerks, two publics works employees, and one wastewater operator.

The City of Vader City Council assumes responsibility for the adoption of this plan; the mayor will oversee its implementation.

9.3 Current Trends

9.3.1 Population

According to 2021 Population Estimates Program and 2020 American Community Survey, the population of the City of Vader as of June 2021 was 642. Since 2010, the population has grown at an average annual rate of 0.3 percent.

9.3.2 Development

Since 2019, significant home building has taken place in Vader. Two dozen new homes are complete, with nearly forty more in pre-application. Infill development as well as subdivisions are in the works. Historical growth is foreseen into the future.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 9-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 9-2. Recent and Expected Future Development Trends.

Criterion							
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*							No
Is your jurisdiction expected to annex any areas during the performance period of this plan? *If yes, describe land areas and dominant uses.* *If yes, who currently has permitting authority over these areas?*	Five small parcels. Vacant farm and park lands. Lewis County						Yes
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas.*							No
		2017	**2018**	**2019**	**2020**	**2021**	**2022**
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	**Single Family**	1	2	6	6	6	4
	Multi-Family	0	0	0	0	0	0
	Other	0	0	0	0	0	0
	Total	1	2	6	6	6	0

Criterion	Response
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 0 • Landslide: 0 • High Liquefaction Areas: 0 • Wildfire Risk Areas: 0
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	Vader is urban, with buildable lot sizes allowed down to 7500 sq/ft.

9.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 9-3.
- Development and permitting capabilities are presented in Table 9-4.
- An assessment of fiscal capabilities is presented in Table 9-5.
- An assessment of administrative and technical capabilities is presented in Table 9-6.
- An assessment of education and outreach capabilities is presented in Table 9-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 9-8.
- Classifications under various community mitigation programs are presented in Table 9-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 9-10.

Table 9-3. Planning and Regulatory Capability.

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code *Comment:* VCM 23.04	Yes	No	No	No
Zoning Code *Comment:* VCM 27.01	Yes	No	No	No
Subdivisions *Comment:* VCM 25.01	Yes	No	No	No
Stormwater Management *Comment:* VCM 21.01	Yes	No	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Post-Disaster Recovery	No	No	No	No
Comment:				
Real Estate Disclosure	No	No	No	No
Comment:				
Growth Management	Yes	No	No	No
Comment: VCM 31.01				
Site Plan Review	Yes	No	No	No
Comment: VCM 27.50.40				
Environmental Protection	Yes	No	No	No
Comment: VCM 29.04				
Flood Damage Prevention	Yes	No	No	No
Comment: VCM 29.08				
Emergency Management	No	No	No	No
Comment:				
Climate Change	No	No	No	No
Comment:				
Other	No	No	No	No
Comment:				
Planning Documents				
Comprehensive Plan	Yes	No	No	No
Comment: Resolution 10-2020				
Capital Facilities Plan	Yes	No	No	No
How often is the plan updated? 5-year cycle				
Comment: Resolution 10-2020				
Disaster Debris Management Plan	No	No	No	No
Comment:				
Floodplain or Watershed Plan	Yes	No	No	No
Comment:				
Stormwater Plan	Yes	No	No	No
Comment: VCM 21.01				
Water System Plan	No	Yes	No	No
Comment: Lewis County				
Habitat Conservation Plan	No	No	No	No
Comment:				
Economic Development Plan	No	No	No	No
Comment:				
Shoreline Management Plan	Yes	No	No	No
Comment: VCM 33.01				
Community Wildfire Protection Plan	No	No	No	No
Comment:				
Forest Management Plan	No	No	No	No
Comment:				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Climate Action Plan	No	No	No	No
Comment:				
Comprehensive Emergency Management Plan	Yes	No	No	No
Comment: Adopted July 2010				
Threat and Hazard Identification and Risk Assessment (THIRA)	No	No	No	No
Comment:				
Post-Disaster Recovery Plan	No	No	No	no
Comment:				
Continuity of Operations Plan	No	No	No	No
Comment:				
Public Health Plan	No	No	No	No
Comment:				
Other	No	No	No	No
Comment:				

Table 9-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
If no, who does? If yes, which department? Vader Building Department, Deputy Clerk.	
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	No

Table 9-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: All	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	
If yes, specify:	

Table 9-6. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:* City Planning	Yes
Engineers or professionals trained in building or infrastructure construction practices *If yes, Department/Position:* Building Official	Yes
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:* City Engineer	Yes
Staff with training in benefit/cost analysis *If yes, Department/Position:* Clerk/Treasurer	Yes
Surveyors *If yes, Department/Position:* Contract when needed	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:* City Planner	Yes
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:*	No
Grant writers *If yes, Department/Position:*	No
Other *If yes, Department/Position:*	

Table 9-7. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* General information	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 9-8. National Flood Insurance Program Compliance.

Criterion	Response
What local department is responsible for floodplain management?	Building
Who is your floodplain administrator? (Department/Position)	City Building Permit Administrator
Are any certified floodplain managers on staff in your jurisdiction?	None
What is the date that your flood damage prevention ordinance was last amended? *Ordinance Number or Code Reference:* ORD:2008-02 (VMC 29.08)	Jan 7, 2008
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	No
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Does your jurisdiction have the latest effective Flood Insurance Rate Maps adopted? *If no, state why. If yes, what is the effective date?* March 1978	YES
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	YES
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* $250,000 *What is the premium in force?* $351	1
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?* $0	0
Description of how the City implements the substantial improvement/substantial damage provisions of their floodplain management ordinance *Describe:* After an event, the Floodplain Administrator will assemble a team of inspectors to perform a rapid assessment of structures within the floodplain of the affected areas to assess which structures may have been damaged. If the event was flooding, this team would have also conducted a windshield survey during the flood event to document structures affected by flooding. All damaged structures will be required to obtain a flood permit for the proposed repairs and provide a contractor's cost estimate. The cost will be compared to the market value of the structure prior to damage, starting with the assessed improvement value, if available, or an appraised value secured by the landowner. If the cost to repair the structure is greater than 50% of the structure value, the structure will need to be brought into compliance with current floodplain regulations.	

a. According to FEMA statistics as of January 18, 2024

Table 9-9. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No		N/A
DUNS #	Yes	148634640	N/A
Community Rating System	No		N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	No		N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 9-10. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

9.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

9.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **N/A**

9.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Comprehensive Plan**
- **Water and Sewer Plan**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

9.6 Risk Assessment

9.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 9-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 9-11. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

9.6.2 Hazard Risk Ranking

Table 9-12 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 9-12. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	36	High
2	Earthquake	36	High
3	Wildfire	34	High
4	Severe Weather	18	Medium
5	Flood	18	Medium
6	Avalanche	0	Low
7	Landslide	0	Low
8	Volcano	0	Low

9.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- N/A

9.7 Status of Previous Plan Actions

Table 9-13 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 9-13. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue to enforce the flood ordinance and building codes to reduce flood damages.	X			
Comment: Current				
Develop a plan for flood damage control and staff training to implement.			X	VAD-4
Comment: Not current				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Develop a plan for emergency communications among staff during an event.	X			
Comment: Purchased two-way radio for redundant communication methods.				
Develop a plan to identify, remove, and manage tree and limb hazards.			X	VAD-9
Comment: Not current				
Purchase backup generator(s) for power outages.			X	VAD-6
Comment: Wastewater Facility has a generator, but there would be a need for City Hall.				
Develop a plan for an alternate facility to provide City Hall services.			X	VAD-1, 7
Comment: Not complete				
Evaluate the need to anchor the outfall pipe at WWTP.			X	VAD-8
Comment: Engineering in process				

9.8 Hazard Mitigation Action Plan

Table 9-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 9-15 identifies the priority for each action.

Table 9-14. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action VAD-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Dam Failure, Earthquake, Wildfire, Severe Weather, Flood					
New	1, 5, 6	City of Vader Community Development	N/A	High	HMGP, BRIC, FMA	Long-term
Action VAD-2—Integrate the hazard mitigation plan into other plans, ordinances, and programs that dictate land use decisions in the community.						
Hazards Mitigated:	Dam Failure, Earthquake, Wildfire, Severe Weather, Flood					
New and Existing	2, 3	City of Vader Community Development	N/A	Low	Staff Time, General Funds	Short-term
Action VAD-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Dam Failure, Earthquake, Wildfire, Severe Weather, Flood, Avalanche, Landslide, Volcano					
New and Existing	2, 3	City of Vader City Clerk	N/A	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action VAD-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Dam Failure, Severe Weather, Flood					
New and Existing	2, 3, 4	City of Vader Community Development	N/A	Low	Staff Time, General Funds	Short-term
Action VAD-5—Identify and pursue strategies to increase adaptive capacity to climate change.						
Hazards Mitigated:	Dam Failure, Earthquake, Wildfire, Severe Weather, Flood, Avalanche, Landslide, Volcano					
New and Existing	2, 3, 5, 6	City of Vader Community Development	N/A	Low	Staff Time, General Funds, Commerce grant	Short-term
Action VAD-6—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	1, 5, 6	City of Vader Public Works	N/A	Medium	HMGP, BRIC, Utility funds	Medium-term
Action VAD-7— Develop a plan for continuity for the City of Vader and City Hall services.						
Hazards Mitigated:	Dam Failure, Earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	1, 2, 3,4, 5, 6	City of Vader Administration	LC DEM	Low	Staff Time, General Funds	Short-term
Action VAD-8— Evaluate the need to anchor the outfall pipe at WWTP. (grant funding complete)						
Hazards Mitigated:	Dam Failure, Severe Weather, Flood					
New	1, 5, 6	City of Vader Public Works	N/A	Medium	WA Dept Ecology	Medium-term
Action VAD-9— Develop a plan to identify, remove, and manage tree and limb hazards.						
Hazards Mitigated:	Earthquake, Wildfire, Severe Weather, Flood Landslide, Volcano					
New and Existing	1, 5	City of Vader Public Works	N/A	Medium	General Funds	Short-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 9-15. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Low	Low
2	2	Low	Low	Yes	No	Yes	Low	High
3	2	Low	Low	Yes	No	Yes	Low	High
4	3	Low	Low	Yes	No	Yes	Low	High
5	4	Low	Low	Yes	No	Yes	Low	High
6	3	Medium	Medium	Yes	Yes	No	Medium	High
7	6	Medium	Low	Yes	No	Yes	Medium	High
8	3	High	Medium	Yes	Yes	No	High	High
9	2	High	Medium	Yes	Yes	No	High	High

9.9 Public Outreach

Table 9-16 lists public outreach activities for this jurisdiction.

Table 9-16. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
City Council Meeting – Hazard Mitigation	12-6-2023	15

9.10 Information Sources Used for This Annex

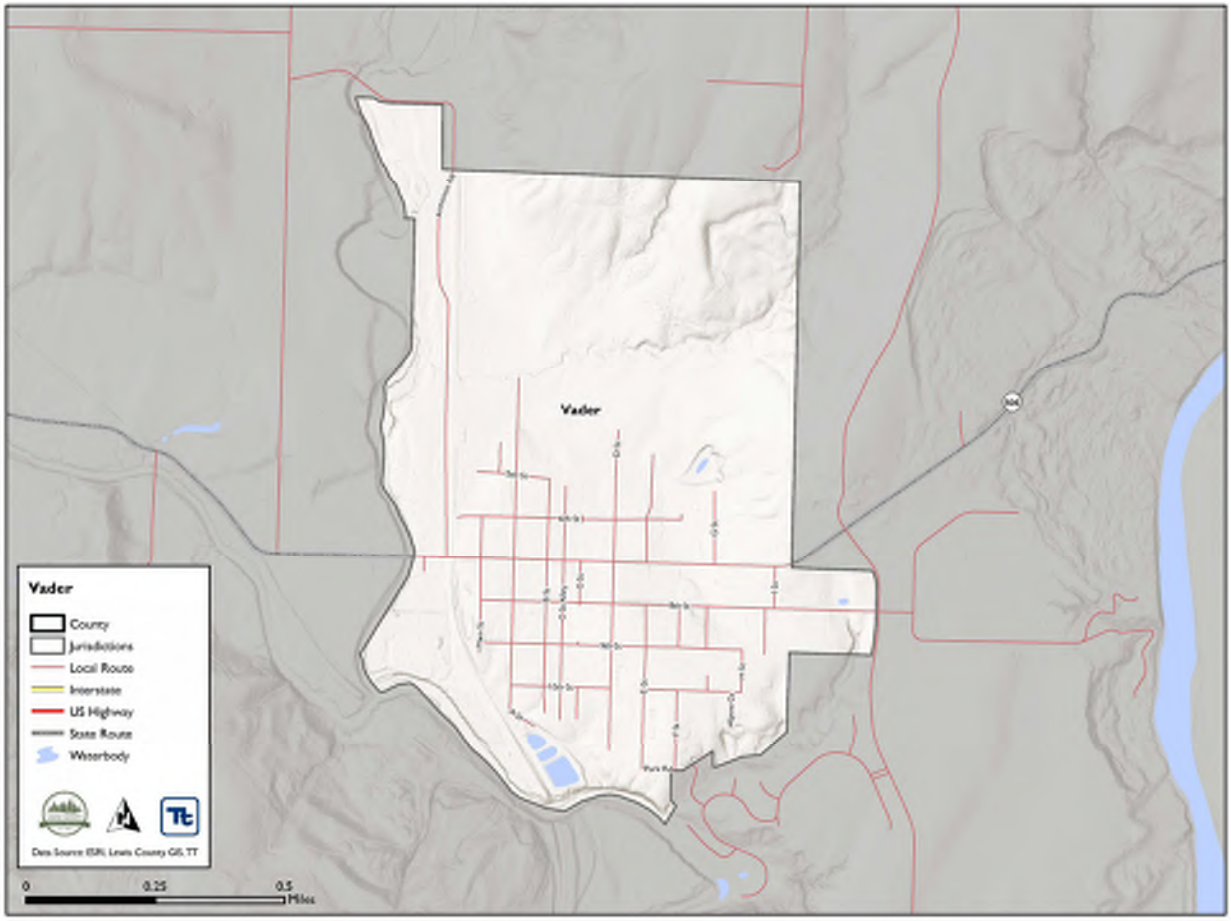
The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

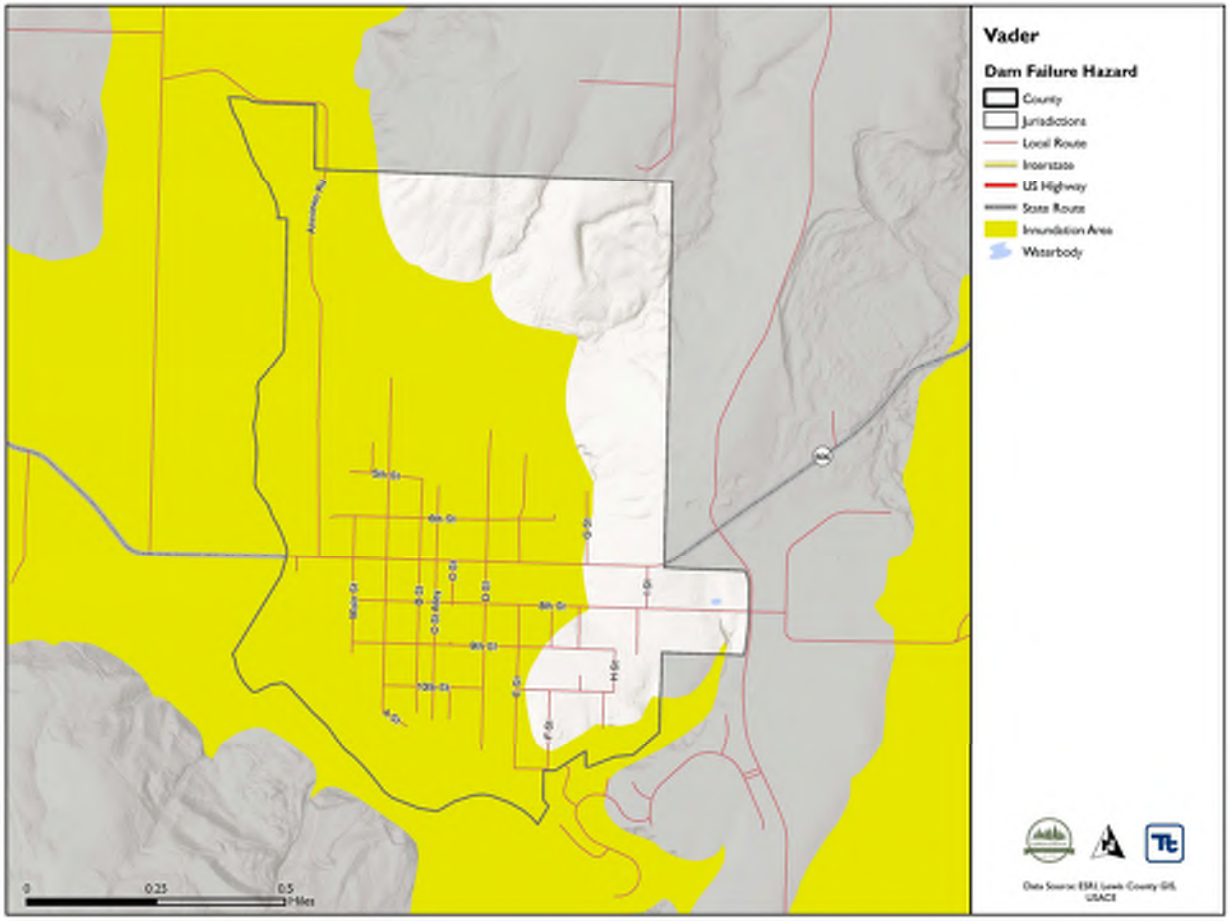
- **City of Vader Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Vader Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

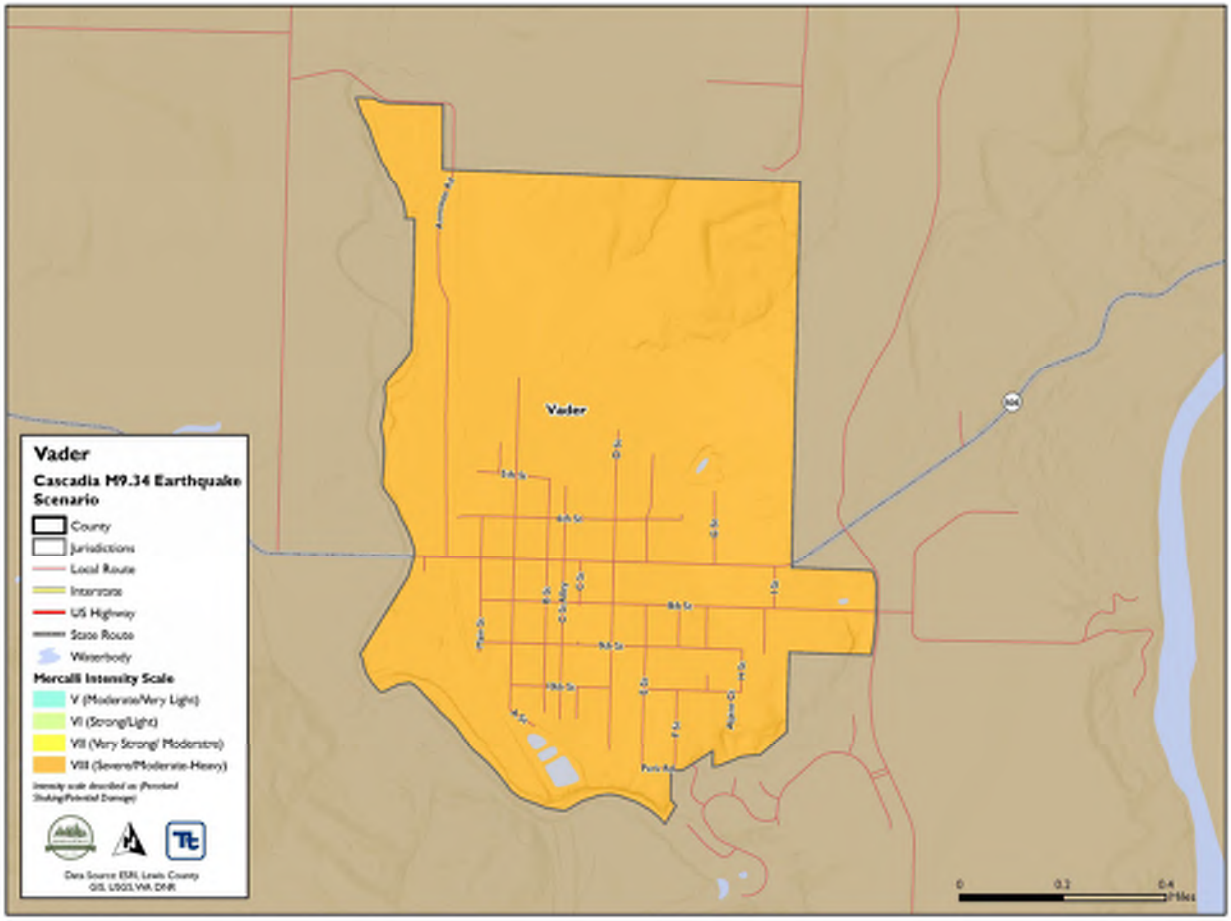
The following outside resources and references were reviewed:

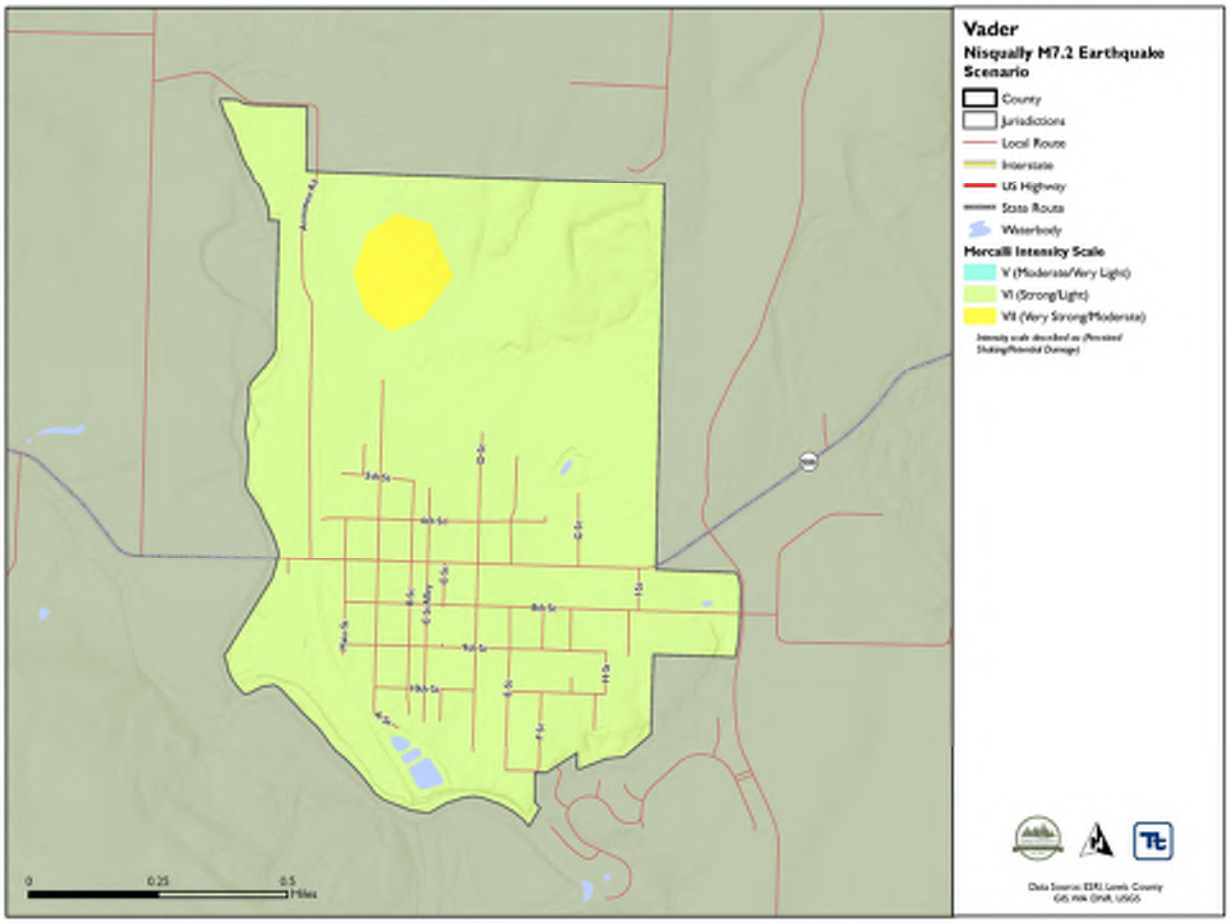
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

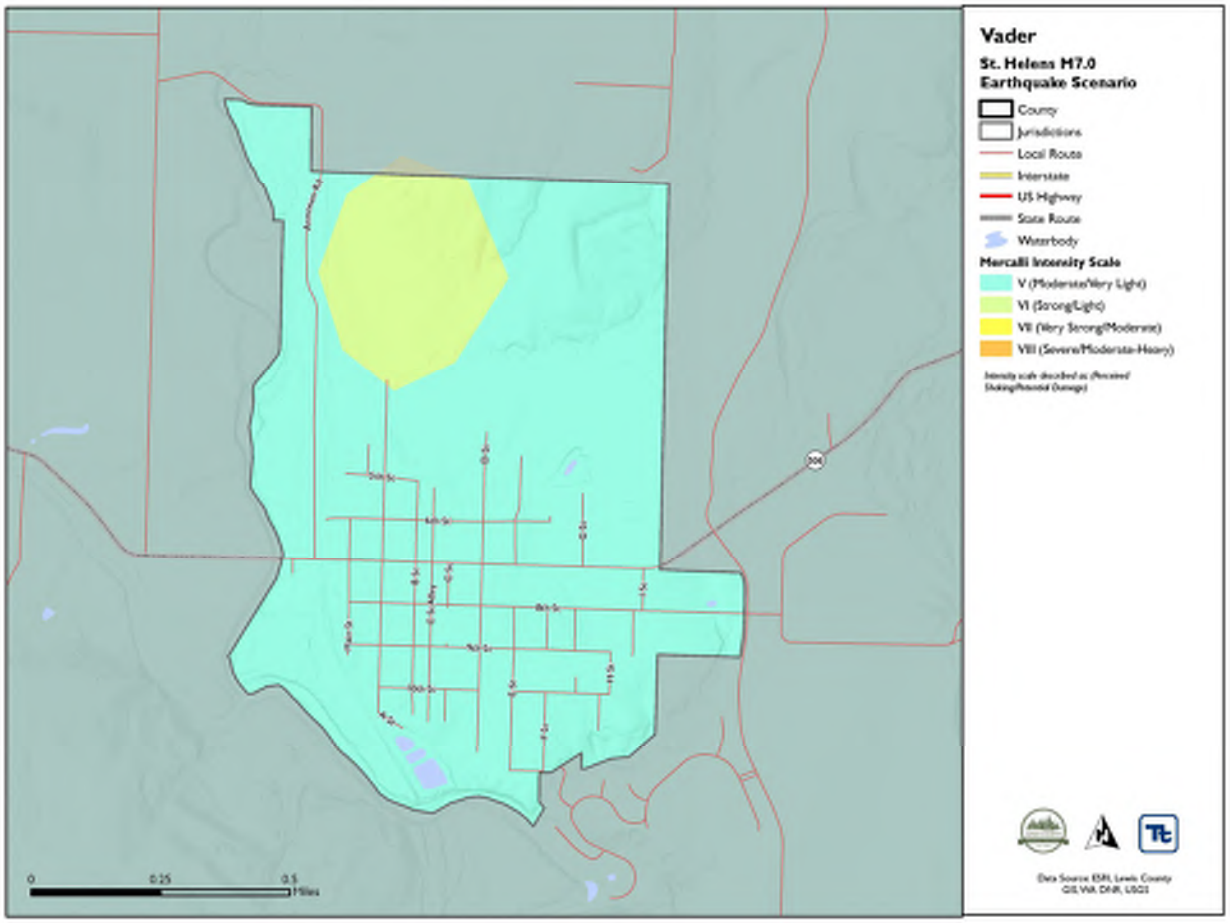
9.11 Hazard Maps

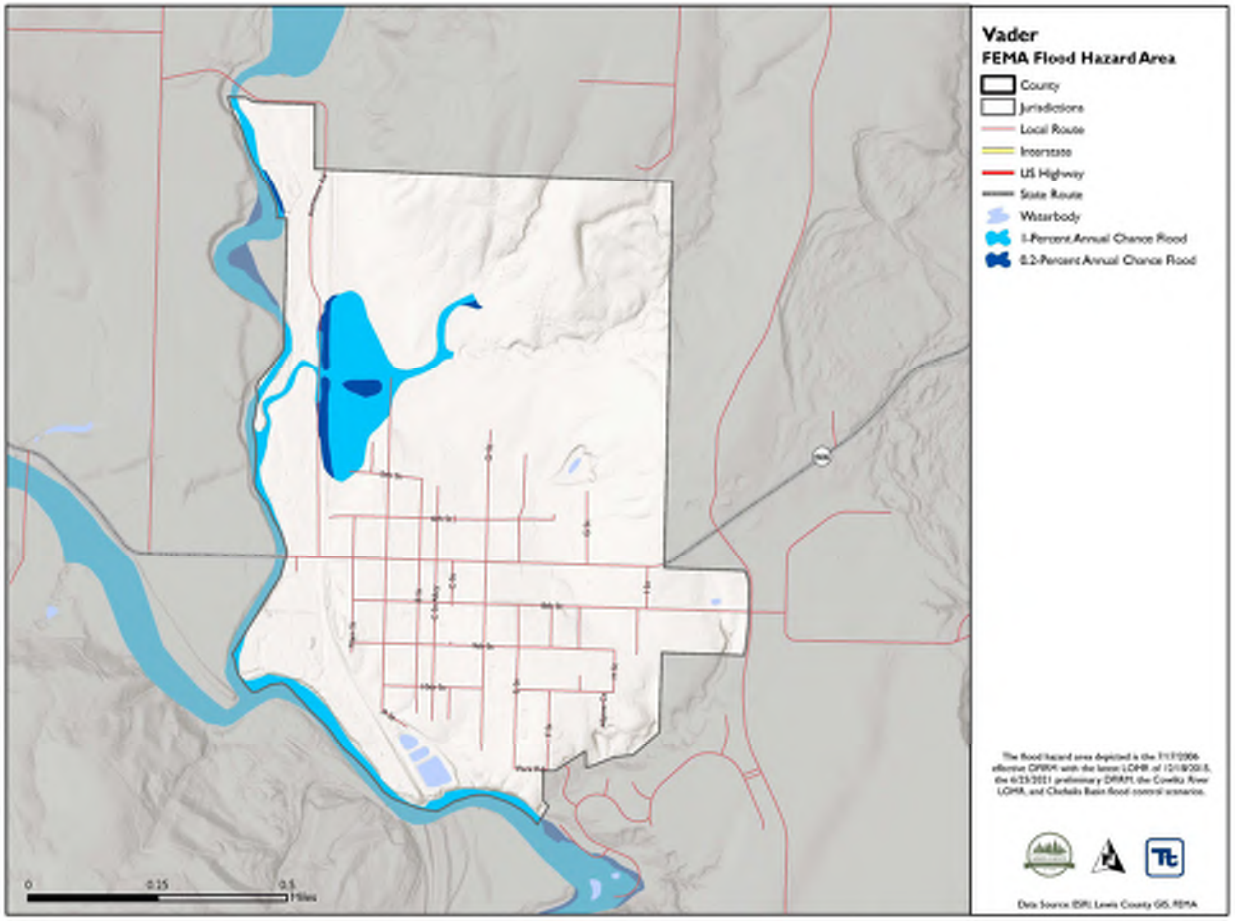

Vader
Vader
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
0
0.25
0.5
Miles

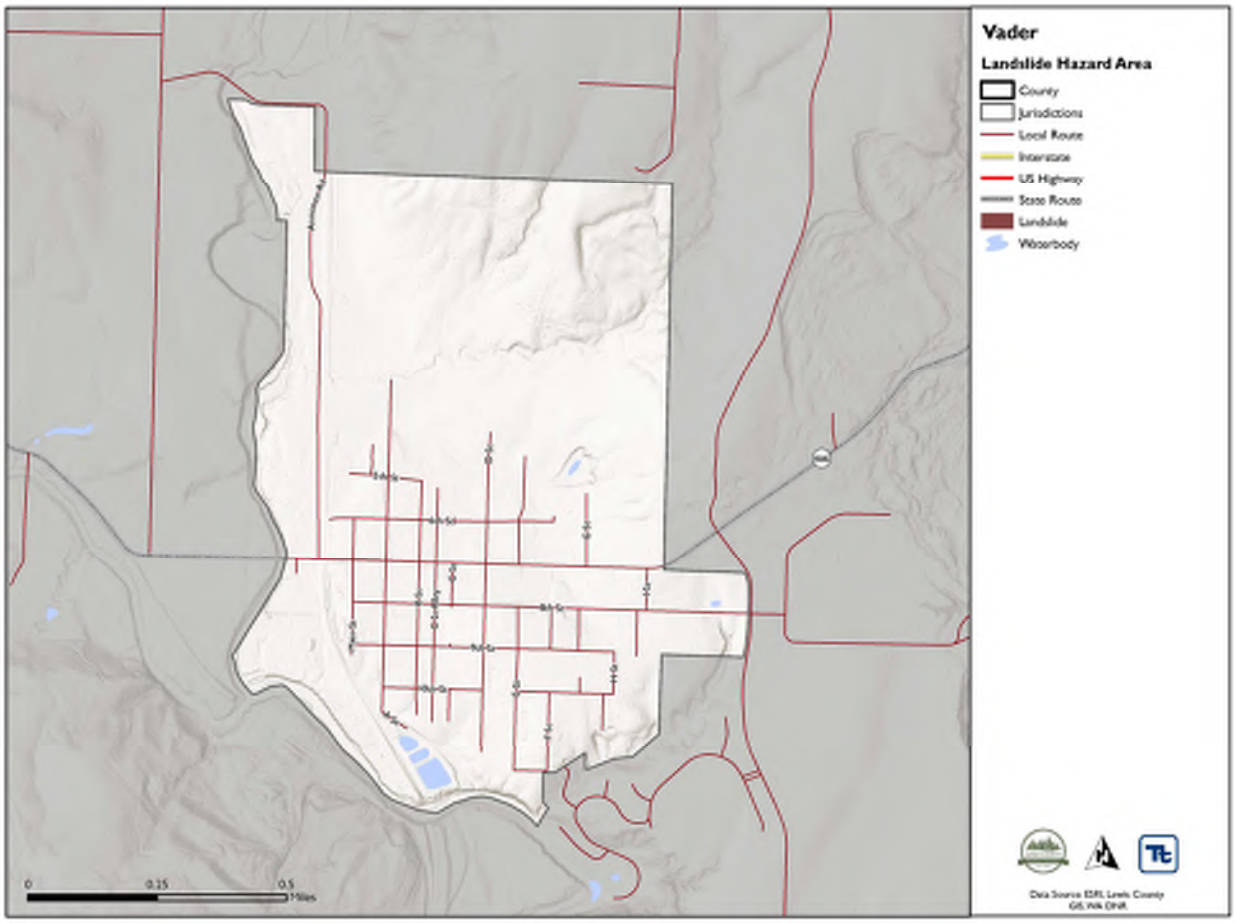

Vader
Dam Failure Hazard
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Inundation Area
Waterbody
0
0.25
0.5
Miles

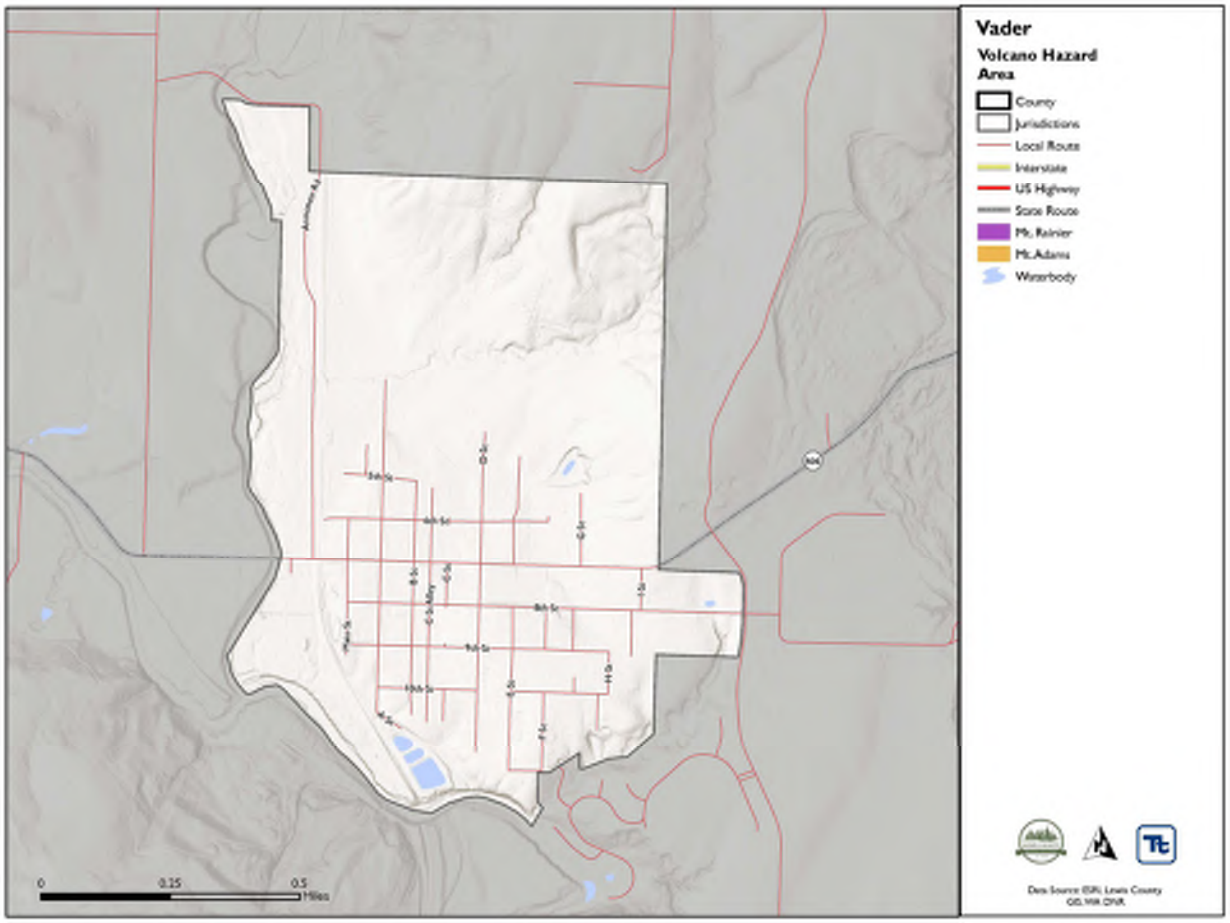

Vader
Vader
Cascadia M9.34 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/ Moderate)
VIII (Severe/Moderate-Heavy)
Data Source: ESRI, Lewis County GIS, USGS, WA DNR
0
0.2
0.4
Miles


Vader
Nisqually M7.2 Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
0
0.25
0.5
Miles


Vader
St. Helens M7.0
Earthquake Scenario
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
Mercalli Intensity Scale
V (Moderate/Very Light)
VI (Strong/Light)
VII (Very Strong/Moderate)
VIII (Severe/Moderate-Heavy)
Intensity scale described as Perceived Shaking/Potential Damage
0
0.25
0.5
Miles
Data Source: ESRI, Lewis County GIS, WA DNR, USGS


Vader
FEMA Flood Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Waterbody
1-Percent Annual Chance Flood
0.2-Percent Annual Chance Flood
0
0.25
0.5
Miles
Data Source: ESRI, Lewis County GIS, FEMA


Vader
Landslide Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Landslide
Waterbody
0
0.15
0.5
Miles


Vader
Volcano Hazard Area
County
Jurisdictions
Local Route
Interstate
US Highway
State Route
Mt. Rainier
Mt. Adams
Waterbody
0
0.25
0.5
Miles

10.0 TIMBERLAND REGIONAL LIBRARY

10.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Cheryl Heywood, Executive Director
415 Tumwater Blvd
Tumwater, WA 98501
Telephone: 360-943-5001
e-mail Address: cheywood@trl.org

Alternate Point of Contact
Brenda Lane, Operations Director
415 Tumwater Blvd
Tumwater, WA 98501
Telephone: 360-943-5001
e-mail Address: blane@trl.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 10-1.

Table 10-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Cheryl Heywood	Executive Director
Brenda Lane	Operations Director

10.2 Jurisdiction Profile

10.2.1 Overview

Timberland Regional Library (TRL) is an intercounty rural public library district created in 1968 to provide public library resources, services and programs. TRL has 29 libraries across Lewis, Pacific, Grays Harbor, Mason and Thurston counties. There are six libraries in Lewis County - Packwood, Randle, Salkum, Winlock, Chehalis and Centralia. TRL is a junior taxing district, employing 39 staff in Lewis County, with 255 budgeted positions in the five counties. In 2022, 90.5% of revenue was from property taxes; 7.7% from timber revenue; and 1.8% other. The TRL Board of Trustees is the governing body and has adoptive authority. The Executive Director will oversee its implementation.

Timberland Regional Library Board of Trustees assumes responsibility for the adoption of this plan; and the Executive Director will oversee its implementation.

10.2.2 Service Area

TRL's service area in Lewis County covers 2,436 sq. miles serving a population of 84,398 (2021). The cities of Morton (beginning January 2024), Mossyrock, Napavine, and Pe-Ell are not included in TRL's service area.

10.2.3 Assets

Table 10-2 summarizes the assets of TRL and their value.

Table 10-2. Libraryt Assets.

Asset	Value
Critical Facilities	
Packwood Timberland Library, 109 Main St W, Packwood, WA (1957), 4,755 sq feet	Building value: $1,267,200 Contents value: $542,048
Centralia Timberland Library, 110 S Silver St, Centralia, WA (1968) 13,510 sq ft	Building value: 0 Contents value: $1,583,244
Randle (Mountain View) Timberland Library, 210 Silverbrook Rd, Randle, WA	Building value: 0 Contents value: $207,950
Winlock Timberland Library, 322 NE 1st St, Winlock, WA	Building value:0 Contents value: $434,151
Chehalis Timberland Library, 400 N Market Blvd, Chehalis, WA	Building value: 0 Contents value: $1,243,298
Salkum Timberland Library, 2480 US Highway 12, WA	Building value: $1,359,600 Contents value: $997,911
Packwood Timberland Library, 109 Main St W, Packwood, WA (1957), 4,755 sq feet	Building value: $1,267,200 Contents value: $542,048
Randle (Mountain View) Timberland Library, 210 Silverbrook Rd, Randle, WA	Building value: 0 Contents value: $207,950
Winlock Timberland Library, 322 NE 1st St, Winlock, WA	Building value:0 Contents value: $434,151
Chehalis Timberland Library, 400 N Market Blvd, Chehalis, WA	Building value: 0 Contents value: $1,243,298
Salkum Timberland Library, 2480 US Highway 12, WA	Building value: $1,359,600 Contents value: $997,911
Total:	**$13,687,560**

10.3 Current Trends

TRL was formed in 1968 to serve Lewis, Mason, Thurston, Pacific and Grays Harbor counties. There are no plans to extend beyond these counties. In 2000, there were approximately 68,600 people in the county; in 2017, Lewis County Planners estimated there will be 104,772 in 2040 in the county. TRL purchased property and is working on building a new library in Randle in 2023-2024, if approved by the TRL Board of Trustees. In partnership with Energy Northwest, electric vehicle charging stations were installed at the Salkum Timberland Library in 2023. “Anywhere Library” is TRL’s mobile services which will be introduced in late 2023 to the county, with the goal to schedule 16-32 locations per month to reach residents in the rural areas of the county.

10.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 10-3.

An assessment of fiscal capabilities is presented in Table 10-4.

An assessment of administrative and technical capabilities is presented in Table 10-5.

An assessment of education and outreach capabilities is presented in Table 10-6.

Classifications under various community mitigation programs are presented in Table 10-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 10-8.

Table 10-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
N/A	N/A	N/A

Table 10-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	N/A
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 10-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:*	No
Engineers or professionals trained in building or infrastructure construction practices ***If yes, Department/Position:***	No
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:*	No
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:* Brenda Lane	Yes
Grant writers *If yes, Department/Position:*	No

Table 10-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 10-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	**N/A**	**N/A**	**N/A**
DUNS #	**Yes**	**08-090-0707**	**N/A**
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 10-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

10.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

10.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **None**

10.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Follow incorporated cities and county plans**
- **Update TRL's Emergency Plan and integrate with cities/county plans**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

10.6 Risk Assessment

10.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 10-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 10-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	0
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	0
Flooding and Mudslides	4635	11/13-11/15/2021	0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	0
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	0
Biological, COVID-19	4481	1/20/2020-9/11/2023	0
Biological, COVID-19	3427	1/20/2020-9/1/2023	0
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	0
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	0
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	0
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	0
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	0
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	0
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	0
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	0

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	0
Earthquake	1361	2/28-3/16/2001	0
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	0
Severe Storms, Flooding	1100	1/26-2/23/1996	0
Storms, High Winds, Floods	1079	11/7-12/18/1995	0
Severe Storm, High Winds	981	1/20-1/21/1993	0
High Tides, Severe Storm	896	12/20-12/31/1990	0
Flooding, Severe Storm	883	11/9-12/20/1990	0
Flooding, Severe Storm	852	1/6-1/14/1990	0
Severe Storms, Flooding	784	11/22-11/29/1986	0
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	0
Severe Storms, Mudslides, Flooding	545	12/10/1977	0
Severe Storms, Flooding	492	12/13/1975	0
Severe Storms, Snowmelt, Flooding	414	1/25/1974	0
Severe Storms, Flooding	322	2/01/1972	0
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	0
Heavy Rains and Flooding	185	12/29/1964	0

10.6.2 Hazard Risk Ranking

Table 10-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 10-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	34	High
2	Wildfire	24	High
3	Flood	23.3	High
4	Dam Failure	11.7	Low
5	Volcano/lahar (Randle/Packwood)	1.13	Low
6	Landslide	0.73	Low
7	Severe Weather	0	Low
8	Avalanche	0	Low

10.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None have been identified.

10.7 Status of Previous Plan Actions

Table 10-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 10-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
N/A				
Comment: Did not participate in the previous Hazard Mitigation Plan				

10.8 Hazard Mitigation Action Plan

Table 10-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction.

Table 17-13 identifies the priority for each action.

Table 10-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action TRL-1— Update Emergency Plan including training staff and updating inventory with photos.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	1,2,3,4	TRL	N/A	Low	Staff time, General Funds	Short-term
Action TRL -2—Actively participate in the county-wide hazard mitigation public information strategy that meets the needs of all planning partners and reaches the whole community. Leverage public outreach partnering capabilities to inform and educate the public about hazard mitigation and preparedness. Seek opportunities to promote the mitigation of natural hazards within the planning area, utilizing information contained in this plan.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New and Existing	1,2,3,4	TRL	TRL	Low	Staff Time, General Funds	Medium-Term
Action TRL -3—Expand Anywhere Library materials to include information on hazard risk, mitigation, and preparedness, to ensure information reach the whole community, especially the vulnerable and underseved populations.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New and Existing	1,3	TRL	TRL	Low	Staff Time, General Funds	Medium-Term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 10-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	4	High	Low	Yes	No	Yes	High	Low
2	4	High	Low	Yes	Unsure	Yes	High	Unsure
3	2	High	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

10.9 Public Outreach

Table 10-14 lists public outreach activities for this jurisdiction.

Table 10-14. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
Library bulletin boards	Ongoing	1
Library social media	Ongoing	1
Programs re hazard mitigation	TBD	1
Anywhere Library – disbursement of hazard mitigation materials	TBD	1

10.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- N/A

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

11.0 PORT OF CHEHALIS

11.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Bill Teitzel, Operations Manager
321 Maurin Road
Chehalis, WA 98532
Telephone: 360-748-9365
e-mail Address: bteitzel@portofchehalis.com

Alternate Point of Contact
Lindsey Senter
321 Maurin Road
Chehalis, WA 98532
Telephone: (360) 748-9365
e-mail Address: lsenter@portofchehalis.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 11-1.

Table 11-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Lindsey Senter	CEO
Bill Teitzel	Operations Manager
Dana Lampert	Facilities Manager
Justine Pense	Office Manager

11.2 Jurisdiction Profile

11.2.1 Overview

The Port of Chehalis was created in 1986 and defined as a special district as per RCW 53.04.010. The Port of Chehalis is governed by three port commissioners as per RCW 53.57.010(1). The Chief Executive Officer (CEO) reports directly to the board. The Port of Chehalis currently administers the Lewis County Flood Control District #1.

The Port of Chehalis prepares shovel ready properties for industrial and commercial use, attracting industry and quality jobs to the area. The mission of the Port of Chehalis is to grow and diversify the local economy, and to foster high quality job creation for Lewis County.

The Port of Chehalis owns rail infrastructure which transports materials into and out of the Port district.

At present, the Port of Chehalis staffs four full-time positions including the CEO but works with a host of consultants and contractors daily. The Port's funding sources are local tax funds, property lease, grant funding and property sales.

The Port of Chehalis assumes responsibility for the adoption of this plan; the Port's Operations Manager will oversee its implementation.

11.2.2 Service Area

The District service area covers 95 square miles serving a population of 15,900 residents.

11.2.3 Assets

Table 11-2 summarizes the assets of the District and their value.

Table 11-2. Port of Chehalis Assets.

Asset	Value
Property	
316 acres of land, 1.20 miles Rail line and rail spur	$19,900,000
Total	**$19,900,000**
Equipment	
Ventrac 400Z Tractor	$20,000
2006 Ford F-550 Flatbed utility	$15,000
2012 Chevrolet Express multi-passenger van	$20,000
John Deer Gator ATV XUV560	$5,000
Genie Scissor Lift GS-1930	$3,500
Ventrac Flail Mower attachment	$7,000
Ventrac Boom Mower attachment	$15,250
Total:	**$85,750**
Critical Facilities	
Port of Chehalis Office Complex (321 Maurin Road, Chehalis)	$2,000,000
Port of Chehalis Permerl Building (105 McBride Court, Chehalis)	$2,500,000
Port of Chehalis, Chehalis Co-Works (478 N. Market Blvd, Chehalis)	$150,000
Port of Chehalis Industrial Building (102 McBride Court, Chehalis)	$1,750,000
Port of Chehalis Commercial Building (2700 Jackson Hwy, Chehalis)	$650,000
Port of Chehalis Industrial Building (2726 Jackson Hwy, Chehalis)	$250,000
Total:	**$7,165,000**

11.3 Current Trends

The district has no plans to expand boundaries, but the Port does see expansion within the Industrial Development District in the coming years as more interest in manufacturing and other industrial related businesses look to expand in the port district.

11.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 11-3.

An assessment of fiscal capabilities is presented in Table 11-4.

An assessment of administrative and technical capabilities is presented in Table 11-5.

An assessment of education and outreach capabilities is presented in Table 11-6.

Classifications under various community mitigation programs are presented in Table 11-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 11-8.

Table 11-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Title 53 RCW: Port Districts		
Chehalis Municipal Code Title 1, 12, 15, 16, and 17		
Lewis County Code Title 1 and 8		
Port of Chehalis Harbor Comprehensive Scheme	11/2022	

Table 11-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 11-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Operations Manager	
Engineers or professionals trained in building or infrastructure construction practices	No
If yes, Department/Position:	
Planners or engineers with an understanding of natural hazards	No
If yes, Department/Position:	
Staff with training in benefit/cost analysis	No
If yes, Department/Position:	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	No

If yes, Department/Position:	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	No
If yes, Department/Position:	
Grant writers	Yes
If yes, Department/Position: Operations Manager	

Table 11-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Port of Chehalis Commission	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 11-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes	53	1/2023
DUNS #	Yes		1/2022
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 11-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Medium
Comment:	
Political support for implementing climate change adaptation strategies	Medium
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Medium
Comment: City and County have ultimate authority, and the Port of Chehalis supports this authority.	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Medium
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

11.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

11.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Flood Control District #1:** Support the commission of this district in maintaining and looking for improvements in flood control within the district.

11.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **City of Chehalis Flood Mitigation planning and study:** The city and the Port of Chehalis share the same causes of re-occurring flood issues, and share financial resources to study and find ways for flood mitigation.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

11.6 Risk Assessment

11.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 11-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 11-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$30,000
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$15,000 (estimate)
Flooding and Mudslides	4635	11/13-11/15/2021	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$20,000

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	$0
Biological, COVID-19	3427	1/20/2020-9/1/2023	$0
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$0
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$0
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$0
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	$0
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$10,000
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$55,000
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$1.75 million
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$0
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$0
Earthquake	1361	2/28-3/16/2001	$0
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$
Severe Storms, Flooding	1100	1/26-2/23/1996	$
Storms, High Winds, Floods	1079	11/7-12/18/1995	$
Severe Storm, High Winds	981	1/20-1/21/1993	$
High Tides, Severe Storm	896	12/20-12/31/1990	$
Flooding, Severe Storm	883	11/9-12/20/1990	$
Flooding, Severe Storm	852	1/6-1/14/1990	$ N/A
Severe Storms, Flooding	784	11/22-11/29/1986	$

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$
Severe Storms, Mudslides, Flooding	545	12/10/1977	$
Severe Storms, Flooding	492	12/13/1975	$
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$
Severe Storms, Flooding	322	2/01/1972	$
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$
Heavy Rains and Flooding	185	12/29/1964	$

11.6.2 Hazard Risk Ranking

Table 11-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 11-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	32	Medium
2	Earthquake	32	Medium
3	Avalanche	0	Low
4	Dam Failure	0	Low
5	Landslide	0	Low
6	Severe Weather	0	Low
7	Volcano	0	Low
8	Wildfire	0	Low

11.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Flooding can impact access to critical port and private infrastructure. One goal would be the reduction of private and public property damage from flooding.
- Earthquakes are a concern in the jurisdiction. One specific area is evacuation planning and access by first responders.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

11.7 Status of Previous Plan Actions

Table 11-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 11-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Flow diversions/drainage improvement and maintenance	X			
Comment: The Port of Chehalis administers the Lewis County Flood Control District #1 (LCFCD#1), which considers and manages drainage ditch maintenance schedules, hydraulic studies, and mitigation projects within the boundaries of LCFCD#1. Yearly projects can vary between simple mowing, to total clean-out of jurisdictional and non-jurisdictional drainage features. The Port partners with, and holds a interlocal agreement with Lewis County to maintain county right-of-way ditch lines which are critical to proper drainage.				
Structural assessments and tenant education			X	6
Comment: The Port conducts structural assessments on the port owned rail system, trestles, stormwater retention systems, drainage systems and other port owned infrastructure.				
Assess surrounding area for flood protection			X	4
Comment: The Port of Chehalis actively accesses both Port owned infrastructure and private infrastructure connected by public roadways and critical areas in the Flood Control District. The Port monitors flooding conditions and road conditions and publishes the information on the Port of Chehalis social media outlet.				
Culverts and drainage			X	3
Comment: Culverts are assessed and maintained in the same process as described in 'Flow diversion/drainage improvements and maintenance' listed above.				
Structural assessment and evaluation	X			
Comment: The Port performs a quarterly and yearly assessment of leased properties and infrastructure. Rail systems are assessed professionally quarterly or after a severe natural disaster, monthly/routinely by in-house staff, and after flooding events.				

11.8 Hazard Mitigation Action Plan

Table 11-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 11-13 identifies the priority for each action.

Table 11-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action POC-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Flood, Earthquake, Severe Weather, Volcano, Wildfire					
New and Existing	1, 5, 6	Port of Chehalis	City of Chehalis Planning or LC CDC	High	HMGP, BRIC, FMA	Long-Term
Action POC-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Flood, Earthquake Avalanche, Dam Failure, Landslide, Severe Weather Volcano, Wildfire					
New and Existing	2, 3	Port of Chehalis	N/A	Low	Staff Time, General Funds	Short Term
Action POC-3- Flood ditch/berm mitigation project – Construction and maintenance of ditches and associated berms to mitigate water runoff and sources of repetitive damage to industrial sites and existing infrastructure.						
Hazards Mitigated:	Flood, Severe Weather					
New and Existing	1, 5	Port of Chehalis	WSEMD/EMD	High	General Funds, BRIC, HMGP	Short-Term
Action POC-4—Maintenance of existing ditch networks and removal of obstructive vegetation to allow flood water capacity and expedited pass through of flood waters.						
Hazards Mitigated:	Flooding and Severe Weather					
New and Existing	1, 5	LCFCD#1	Port of Chehalis	Low	Staff Time, General Funds	Short-term
Action POC-5 - Conduct City of Chehalis/Port of Chehalis Regional Flood Study						
Hazards Mitigated:	Flooding, Sever Weather					
New	1,2,3,4, 5,6	City of Chehalis Community Development	Port of Chehalis	High	General Funds, BRIC, HMGP, FMA	Medium-term
Action POC-6— Structural assessments and tenant education on transportation system that is directly impacted by natural disasters.						
Hazards Mitigated:	Flood, Earthquake, Landslide, Dam Failure, Sever Weather, Volcano, Wildfire, Avalanche					
New and Existing	1, 3, 4, 6	Port of Chehalis	LC DEM	Low	Staff Time, General Funds	Medium-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 11-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Low	Low
2	2	Medium	Low	Yes	No	Yes	High	Low
3	2	High	High	Yes	Yes	No	High	High
4	2	High	Low	Yes	No	Yes	High	Low
5	6	High	High	Yes	Yes	No	High	Low
6	4	High	Low	Yes	No	Yes	Medium	Low

a. See the introduction to this volume for explanation of priorities.

11.9 Information Sources Used for This Annex

Port of Chehalis Harbor Improvement Scheme

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- Final summary report – MRIS1/2700 Jackson Mitigation Ditch
- 2023 Lewis County Flood control District #1 Ditch maintenance Summary Report
- FEMA Project -Scoping Grant

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

11.10 Future Needs to Better Understand Risk/Vulnerability

POC6 – Regional Flood Study partnership with the City of Chehalis to gain information nd outreach on ways to reduce flooding in the port District and areas near the city of Chehalis abandoned wastewater facility. Funded by Office of the Chehalis Basin/RCO. Study will determine alternatives and recommendations to reduce flooding.

12.0 LEWIS COUNTY WATER DISTRICT 2

12.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Amie Smith, District Manager
231 Central Avenue/ PO Box 146
Onalaska, WA 98570
Telephone: 360-978-5191, 360-669-3933
e-mail Address: LCWD2@lewiscounty.com

Alternate Point of Contact
Tristan Wiseman, Operator
1678 St. Hwy 508
Onalaska, WA 98570
Telephone: 360-978-5738, 360-880-8307
e-mail Address:

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 12-1.

Table 12-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Amie Smith	District Manager

12.2 Jurisdiction Profile

12.2.1 Overview

Lewis County Water District 2 was established in 1970. The District's objective is to provide water and sewer service to the residents, businesses, and schools in the unincorporated town of Onalaska, Washington. The District is classified as a "Special Purpose District" by the state of Washington. The District has three regular employees and three governing board members. The District's operations and maintenance, bonds and small capital projects are all funded by the rates charged to its customers. Extraordinary Capital projects have historically been funded by Washington State Drinking Water State Revolving fund, Department of Ecology, and USDA – Rural Development.

The Lewis County Water District No. 2 assumes responsibility for the adoption of this plan; the District Manager will oversee its implementation.

12.2.2 Service Area

The District's service area covers approximately 2 miles wide, by 1 mile deep, serving a population of 657 full-time residential population, plus the regular non-residential population increases from 80 in July and August to 1,090 the rest of the year. The difference in population is due to the students and staff of the Onalaska School District, and the staff and students of a local private school known as the Primer.

12.2.3 Assets

Table 12-2 summarizes the assets of the District and their value.

Table 12-2. Water District 2 Assets.

Asset		Value
Property		
.28 acres of land, 231 Central Ave. Parcel #032801002022		$156,200
.92 acres of land, 233 Central Ave. Parcel #032801002001-Land only		$44,800
.35 acres of land, 0 Hyak Road Parcel #032797001001		$65,500
1.38 acres of land, 0 Hyak Road Parcel #032794001000		$943,900
1.0 acres of land, 1678 St Hwy 508 Parcel #032803001003		$3,250,300
Equipment		
SBR Wastewater Treatment Plan		$1,093,200
Well pump(s), Chlorinator, VFD and apparatus		$398,272
Well pump, and apparatus		$120,300
2- 100,000 Gallon Reservoirs		$380,000
Water Lines, Valves, Hydrants, PRV		$3,732,310
Sewer Lines, Manholes		$505,000
Sewer Lift Station		$35,000
Mowers, Brush cutter, Power tools, Generator, pumps		$37,000
2014-Toyota pickup, with cab and water pump and tools		$28,500
Office and Water System Equipment Storage		$48,000
	Total:	**$6,367,582**
Critical Facilities		
LCWD2 WWTP – 1678 St Hwy 508, Parcel 032803001003		$4,263,200
Well w/ 2 - 100,000 Gal Res – 0 Hyak Road, Parcel 03279400100		$1,172,172
Well – 0 Hyak Road, Parcel 032797001001		$165,800
Pressure Reducing Station		$35,000
Sewer Lift Station – 0 Carlisle Avenue		$35,000
Office and Water System Equipment Storage		$204,200
Water Lines, Valves, Hydrants		$3,732,310
Sewer Lines, Manholes		$505,000
	Total:	**$10,122,682**

12.3 Current Trends

The district is seeing growth within the district with an average of 5 new water and sewer service connections per year for the past 6 years. With the exception of 2022, where the district had an increase in 14 water connections, and 13 out-of-district sewer service connections to service (no additional equipment installed within our district, to provide these additional sewer services (equipment already sized to handle extra flows)).

12.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 12-3.

An assessment of fiscal capabilities is presented in Table 12-4.

An assessment of administrative and technical capabilities is presented in Table 12-5.

An assessment of education and outreach capabilities is presented in Table 12-6.

Classifications under various community mitigation programs are presented in Table 12-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 12-8.

Table 12-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Lewis County Water District 2 Water System Plan	Approved by WA St DOH June 2019	
Lewis County Water District 2 General Sewer Plan Update	Approved by WA St DOE July 2018	
Lewis County Water District 2 Water General Facility Charge Study	2019	
Lewis County Water District 2 Sewer General Facility	2021	
Lewis County Water District 2 Tax Rate Study	2023	

Table 12-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: User fees for both Water and Sewer Services	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 12-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:*	No
Engineers or professionals trained in building or infrastructure construction practices ***If yes, Department/Position:***	No
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:*	No
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:* District Manager is to act as a local water and sewer service emergency manager	Yes
Grant writers *If yes, Department/Position:*	No

Table 12-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* As needed newsletters mailed out, posting on office door, phone message updating.	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 12-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	**N/A**	**N/A**	**N/A**
DUNS #099036592	**Yes**	**Unknown**	**Unknown**
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 12-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

12.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

12.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County Emergency Management**—Create a Hazard Mitigation Plan
- **Washington State Drinking Water** – They are a reference and support at times of need, and approved our most recent water plan update that included some hazard mitigation planning.
- **Washington State Department of Ecology** - They are a reference and support at times of need

12.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Lewis County Water District 2 Plan Update:** We will request that the engineer prioritize hazard mitigation methods, as it is feasible to do so, in the system plan update.
- **Lewis County Sewer District 2 Plan Update:** We will request that the engineer prioritize hazard mitigation methods, as it is feasible to do so, in the system plan update.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

12.6 Risk Assessment

12.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 12-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 12-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$0
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$0
Flooding and Mudslides	4635	11/13-11/15/2021	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$0
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$0
Biological, COVID-19	4481	1/20/2020-9/11/2023	$0
Biological, COVID-19	3427	1/20/2020-9/1/2023	$39,045
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$0
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	Unknown
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	Unknown
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	Unknown
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	Unknown
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	Unknown
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	Unknown
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$500
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	Unknown

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	Unknown
Earthquake	1361	2/28-3/16/2001	Unknown
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	Unknown
Severe Storms, Flooding	1100	1/26-2/23/1996	Unknown
Storms, High Winds, Floods	1079	11/7-12/18/1995	Unknown
Severe Storm, High Winds	981	1/20-1/21/1993	$0
High Tides, Severe Storm	896	12/20-12/31/1990	$0
Flooding, Severe Storm	883	11/9-12/20/1990	$0
Flooding, Severe Storm	852	1/6-1/14/1990	$0
Severe Storms, Flooding	784	11/22-11/29/1986	$0
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Unknown
Severe Storms, Mudslides, Flooding	545	12/10/1977	$0
Severe Storms, Flooding	492	12/13/1975	Unknown
Severe Storms, Snowmelt, Flooding	414	1/25/1974	Unknown
Severe Storms, Flooding	322	2/01/1972	Unknown
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	Unknown
Heavy Rains and Flooding	185	12/29/1964	N/A

12.6.2 Hazard Risk Ranking

Table 12-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 12-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Wildfire	36	High
2	Earthquake	33	High
3	Severe Weather	18	Medium
4	Flood	18	Medium
5	Dam Failure	0	Low
6	Landslide	0	Low
7	Volcano	0	Low
8	Avalanche	0	Low

12.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Majority of the town of Onalaska is at risk in an earthquake due to liquefaction.
- The Waste Water Treatment plant could potentially be at risk of flooding due to its necessary proximately to the south fork of the Newaukum River for outfall.
- We have localized fires in our area every summer. We also have times of high winds during the summer. If these two events ever occurred at the same time it would be a lot for our volunteer Fire District to manage.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

12.7 Status of Previous Plan Actions

Table 12-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 12-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Did not participate in previous Hazard Mitigation Plan				

12.8 Hazard Mitigation Action Plan

Table 12-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 12-13 identifies the priority for each action. Table 12-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 12-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LCWD2-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	1,2,4	Lewis County Emergency Management	Lewis County Special purpose districts, municipalities,	High	HMGP, BRIC, FMA	Long-term
Action LCWD2-2—Maintain generators for critical facilities and infrastructure.						
Hazards Mitigated:	Dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire, avalanche					
New and Existing	1-7	LCWD2	Lewis County	Low	Staff Time, General Funds	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LCWD2-3—Purchase a mobile generator that will be able to supply electricity at an appropriate power level for the back-up well.						
Hazards Mitigated:	Dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire, avalanche					
New and Existing	1-7	LCWD2		Medium	Staff Time, General Funds	Ongoing
Action LCWD2-4—Continue to maintain defensible space around/over infrastructure.						
Hazards Mitigated:	Fire					
New and Existing	1	LCWD2	Contractors as needed	Medium	Staff Time, General/Capital Funds	Ongoing
Action LCWD2-5— Create a water containment plan for the Reservoirs.						
Hazards Mitigated:	Flood and/or Earthquake					
New	2,4	LCWD2		Low	Staff Time	Short-term
Action LCWD2-6—Perform smoke tests on sewer system to locate leaks/I&I to determine systems current ability to handle high flows at times of floods and severe weather.						
Hazards Mitigated:	Floods and Severe weather					
New	3,4	LCWD2	ERWOW	Low	Staff Time	Short-term
Action LCWD2-7—Create a winterization plan for vehicle to ensure access infrastructure during times on Severe weather.						
Hazards Mitigated:	Severe Weather					
New	3	LCWD2		Medium	Staff Time, and General/Capital Funds	Short-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 12-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	Med	High	No	Yes	No	6	Medium
2	7	Med	Low	Yes	No	Yes	5	Low
3	7	Low	Med	No	Yes	Yes	7	Low
4	1	Med	Med	Yes	No	Yes	4	Low
5	2	Med	Low	Yes	No	Yes	2	Low
6	2	High	Low	Yes	No	Yes	3	Low
7	1	High	Low	Yes	No	Yes	1	Low

a. See the introduction to this volume for explanation of priorities.

Table 12-14. Analysis of Mitigation Actions.

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Fire	1,3,4,5	1,2,3,4,5		4,5	1,2,3,4,5	1	1,2,3,4,5	1
Earthquake	1,2,3,4,6	1,2,3,5			2,3,5	1	1,2,3,4,5	1
Medium-Risk Hazards								
Severe Weather		1,2,3,4,6,7		2,3,6		1	1,2,3,4,5,6,7	1
Flood	1,2,5,6	1,2,5,6		2,6		1,6	1,2,6	1
Low-Risk Hazards								
Landslide	1	1				1	1	1
Volcano	1,2	1,2				1		

a. See the introduction to this volume for explanation of mitigation types.

12.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Lewis County Water District 2 General Sewer Plan Update –** reviewed for any identified/potential hazards and suggested action plans.
- **Lewis County Water District 2 General Water Plan –** reviewed for any identified/potential hazards and suggested action plans.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan. Used to assess prior hazardous events and to determine if our area was affected. Also used to determine likelihood of future events affecting our district and what additional issues might affect positive outcomes (remote location, soil structure, location to rivers and dams, road issues, volunteer fire/EMT services, etc.)

13.0 LEWIS COUNTY PUBLIC UTILITY DISTRICT (PUD)

13.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Bryan Watt
PO Box 330
Chehalis, WA 98532
Telephone: 360-748-9261
e-mail Address: Bryanw@lcpud.org

Alternate Point of Contact
Willie Painter
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Chehalis, WA 98532
Telephone: 360-506-1066
e-mail Address: Williep@lcpud.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 13-1.

Table 13-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Travis Kinney	Engineering Manager
Andy Becker	Senior Accountant
Bryan Watt	Operations Manager
Willie Painter	Broadband & External Funding Manager

13.2 Jurisdiction Profile

13.2.1 Overview

Public Utility District No. 1 of Lewis County (LCPUD) is a public utility district formed in 1936, which operates under the statutes of Title 54 Revised Code of Washington. LCPUD is a community-owned, locally governed utility comprised of 144 employees providing power services and telecommunications infrastructure to approximately 35,000 customers throughout most of Lewis County and adjacent communities. Funding is comprised of rates, fees, grants and revenue bonds. It is governed by a three-member Board of Commissioners, which has adoptive authority.

LCPUD assumes responsibility for the adoption of this plan and will oversee its implementation.

13.2.2 Service Area

The District service area covers 2,458 square miles, serving a population of 82,149 (Lewis County only, 2020 Census).

13.2.3 Assets

Table 13-2 summarizes the assets of the District and their value.

Table 13-2. Lewis County Public Utility District Assets.

Asset	Value
Property	
Approximately 3865 Acres of land	$6,934,000
Equipment	
Vehicles at various garage locations	$9,107,329
Cowlitz Falls Vehicles	$684,000
Transmission Powerlines (Throughout Lewis County)	$20,784,120
OH and UG Distribution Power Lines (Throughout Lewis County)	$139,808,098
Dark Fiber Optics	$2,079,676
Total:	**$179,397,223**
Critical Facilities	
Chehalis Operations Center (124 Habein Road, Chehalis)	5,901,293
Cowlitz Falls Hydroelectric Project (1379 Falls Road, Randle)	$167,016,932
Main Office (321 NE Pacific Ave, Chehalis)	$3,234,073
Main Office Annex (342 NW Pacific Ave, Chehalis)	$449,714
Substation- Main Street (698 West Main St., Chehalis)	$1,829,794
Substation- Bunker (313 Spooner Road, Chehalis)	$1,143,230
Substation- Coal Creek (214 Coal Creek Road, Chehalis)	$899,275
Substation- Corkins (1138 HW 603, Chehalis)	$1,066,695
Substation- Elbe (54124 182nd Ave. Ct. E, Eble)	$924,291
Substation- Fairview (1895 SW Fair, Chehalis)	$1,359,305
Substation- Fords Prairie (1806 Gallagher Road, Centralia)	$1,095,317
Substation- Forest (123 Forest-Napavine Road, Chehalis)	$1,238,145
Substation- Glenoma (231 Glenoma Road, Glenoma)	$4,700,340
Substation- Industrial Park (113 Habein Road, Chehalis)	$1,537,422
Substation- Leonard Road (548 Leonard Road, Onalaska)	$1,030,676
Substation- Maurin Road (163 Maurin Road, Chehalis)	$1,828, 321
Substation- Morton (240 7th St, Morton)	$1,397,305
Substation- Mossyrock (304 Mossyrock Rd. W, Mossyrock)	$1,347,785
Substation- Mossyrock Dam (Damron Rd, Mossyrock)	$863, 638
Substation- Napavine (212 2nd Ave SE, Napavine)	$1,629, 568
Substation- Packwood (12782 US Hwy 12, Packwood)	$1,802,104
Substation- PelEll (929 Mueller Road, Pe Ell)	$1,070,470
Substation- Randle (279 Keyhoe Road, Randle)	$1,651,390
Substation- Salkum (122 Huntington Road, Silver Creek)	$1,157,100
Substation- Toledo (551 Toledo-Vader Road, Toledo)	$1,498,016
Substation- US Plywood (Priest Road, Morton)	$419,806
Substation- Vader (1235-16 St Route 506, Vader)	$925,248
Substation- William Ave (398 SW William Ave, Chehalis)	$1,132,892
Substation- Winlock (315 Keron St, Winlock)	$1,663,151
Mill Creek Hydroelectric Project (Spencer Road, Salkum)	$1,824,336

Asset	Value
Substation - Avery Road (543 Avery Road., Evaline)	$1,266,534
Morton Operations Center (240 7th ST, Morton)	$3,000,000
Total:	**$217,904,166**

13.3 Current Trends

LCPUD, like other electric utilities, is experiencing an increasing number and severity of natural and man-made hazards including, but not limited to, wildfire liability from warmer, drier seasons; cyber security threats and attacks on critical infrastructure systems such as Supervisory Control and Data Acquisition (SCADA); and, threats and perpetrated damage to physical infrastructure such as transformers and splice cases. Additionally, electric systems are being tested with volatile market dynamics that may challenge the future sufficient supply of electricity to meet demand in a growing region caused, in part, by a transitioning energy supply as legislatively mandated and changing demand structures. LCPUD's service territory has recently experienced a significant annual increase in new residential construction, a trend that is anticipated to remain for at least five more years into the future.

13.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 13-3.

An assessment of fiscal capabilities is presented in Table 13-4.

An assessment of administrative and technical capabilities is presented in Table 13-5.

An assessment of education and outreach capabilities is presented in Table 13-6.

Classifications under various community mitigation programs are presented in Table 13-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 13-8.

Table 13-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Emergency Action Plan for Cowlitz Falls Hydro Project	November 8, 2022	
Emergency Action Plan for Chehalis Office	July 2023	

Table 13-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: Electric – basic, energy, demand, power factor depending on rate schedule	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Yes
If yes, specify: Federal=Sponsored Grant Programs	

Table 13-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Cowlitz Falls/Multiple positions	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Engineering/multiple positions	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Cowlitz Falls/Multiple positions	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Cowlitz Falls/Multiple positions	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: Engineering/GIS Supervisor and Technicians	
Scientist familiar with natural hazards in local area	Yes
If yes, Department/Position: Cowlitz Falls/Laura Wolfe	
Emergency manager	Yes
If yes, Department/Position: Operations Manager/Bryan Watt, Generation Manager/Joe First	
Grant writers	Yes
If yes, Department/Position: Broadband/Broadband and External Funding Manager	
Other	Yes
If yes, Department/Position: Operations Supervisor/Jeremy Coiteux	

Table 13-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes
If yes, briefly describe: We have pages for Emergency Preparedness, Public Safety, Generator Use, and Power Outages to help mitigate hazardous situations.	
Do you use social media for hazard mitigation education and outreach?	Yes
If yes, briefly describe: We send out information to educate before issues and information during situations to mitigate public impact due to hazards.	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
If yes, briefly describe: Our Board of Commissioners creates policy which affect hazard mitigation.	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
If yes, briefly describe: We have a phone and messaging system that can send alerts directly to those who may be affected.	
Do you have any established warning systems for hazard events?	Yes
If yes, briefly describe: Cowlitz Falls Hydroelectric Project has a downstream notification system to warm people of a large sudden increase in river flow	

Table 13-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS # 041334301	Yes	N/A	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 13-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Medium
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment: Long Range Planning includes potential climate impacts.	

Criterion	Jurisdiction Rating[a]
Participation in regional groups addressing climate risks	Medium
Comment: NWHA, NHA, CEATI, APPA, WPUDA	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Medium
Comment: The PUD has a publicly elected Board of Commissioners that has decision-making authority.	
Identified strategies for greenhouse gas mitigation efforts	Medium
Comment: Clean Energy Action; Climate Commitment Act	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

13.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

13.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- No integration has occurred yet.

13.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Possible integrative planning with county hazard mitigation planning and initiatives.
- Future integration between LCPUD and Lewis County Fire agencies.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

13.6 Risk Assessment

13.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 13-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 13-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$307,315
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$264,192
Flooding and Mudslides	4635	11/13-11/15/2021	$116,222
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$236,988
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$0

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Biological, COVID-19	4481	1/20/2020-9/11/2023	$107,143
Biological, COVID-19	3427	1/20/2020-9/1/2023	$0
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$242,077
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4253	12/1-12/15/2015	$77,777
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$130,464
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$295,729
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	Unknown
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	Unknown
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	Unknown
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	Unknown
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	Unknown
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	Unknown
Earthquake	1361	2/28-3/16/2001	Unknown
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	Unknown
Severe Storms, Flooding	1100	1/26-2/23/1996	Unknown
Storms, High Winds, Floods	1079	11/7-12/18/1995	Unknown
Severe Storm, High Winds	981	1/20-1/21/1993	Unknown
High Tides, Severe Storm	896	12/20-12/31/1990	Unknown
Flooding, Severe Storm	883	11/9-12/20/1990	Unknown
Flooding, Severe Storm	852	1/6-1/14/1990	Unknown
Severe Storms, Flooding	784	11/22-11/29/1986	Unknown
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Unknown

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Mudslides, Flooding	545	12/10/1977	Unknown
Severe Storms, Flooding	492	12/13/1975	Unknown
Severe Storms, Snowmelt, Flooding	414	1/25/1974	Unknown
Severe Storms, Flooding	322	2/01/1972	Unknown
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	Unknown
Heavy Rains and Flooding	185	12/29/1964	Unknown

13.6.2 Hazard Risk Ranking

Table 13-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 13-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	See note	High
2	Flood		High
3	Severe Weather		High
4	Wildfire		Medium
5	Landslide		Medium
6	Dam Failure		Low
7	Volcano		Low
8	Avalanche		Low

Note: Hazard were ranked based on previous damage, frequency of events, and future predictions.

13.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

13.7 Status of Previous Plan Actions

Table 13-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 13-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Review and modify as appropriate, the flood operation plan. Continue normal inspection and maintenance of spillway gates, and normal ongoing inspection and maintenance of dam and storage buildings. *Comment:*	Yes			
Develop strategies to provide necessary services in a Debris Flow event. *Comment:* This is included in our Cowlitz Falls debris management plan and Emergency Action Plan	Yes			
Normal ongoing inspection and maintenance *Comment:* We perform regular inspections and maintenance on the equipment at Cowlitz Falls.	Yes			
Bury main and secondary power lines *Comment:* Need outside funding	Ongoing		X	3
Provide looped distribution services *Comment:* Need outside funding	Ongoing		X	7
Work with other utility providers to provide mutual aid per our agreement. *Comment:* WPUDA Mutual Aid	Yes			
Develop strategies to provide necessary services in a Severe Wind Storm event *Comment:* Working in a Disaster recovery plan			X	8
Develop strategies to provide necessary services in a Disaster event *Comment:* This is included in the Cowlitz Falls Emergency Action Plan	Ongoing		X	8
Develop strategies to provide necessary services in a flood event *Comment:* This is included in the Cowlitz Falls Emergency Action Plan			X	8
Develop strategies to provide necessary services in a Land Subsidence event *Comment:*			X	8
Develop strategies to provide necessary services in a Landslide Event *Comment:*			X	8
Develop strategies to provide necessary services in a Thunderstorm event *Comment:*			X	8

13.8 Hazard Mitigation Action Plan

Table 13-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 13-13 identifies the priority for each action.

Table 13-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	TimeLine
Action LPUD-1—Business Continuity Plan Development						
Hazards Mitigated:	Avalanche, Dam failure, earthquake, flood, landslide, severe weather, volcano, wildfire					
Existing	2, 3	LCPUD Operations Manager	LC	Low	Staff Time, General Funds HMGP, BRIC, FMA	Short term
Action LPUD-2—Wildfire Plan Development						
Hazards Mitigated:	Wildfire					
Existing	2, 3	LCPUD Operations Manager	LCPUD	Low	Staff Time, General Funds, HMGP, BRIC,	Short term
Action LPUD-3—Replace overhead with underground in various areas of Lewis County						
Hazards Mitigated:	Avalanche, earthquake, landslide, severe weather, volcano, wildfire					
New and Existing	1, 4, 5	LCPUD Operations Manager	LCPUD	High	External funds, Grant funds, HMGP, BRIC,	Long term
Action LPUD-4— Actively clear vegetation around LCPUD electrical facilities.						
Hazards Mitigated:	Wildfire, severe weather,					
Existing	1, 4, 5, 6	LCPUD Operations Manager	LPCUD	Medium	General Funds, Grant funds, HMGP, BRIC,	Long term
Action LPUD-5—Install fiber optic infrastructure throughout Lewis County.						
Hazards Mitigated:	Dam failure, severe weather, wildfire					
Existing	1, 4, 5, 6	LCPUD Broadband Manager	LCPUD	High	External funds, Grant funds, HMGP, BRIC	Long Term
Action LPUD-6—Improve Radio Communication bandwidth to rural areas of Lewis County						
Hazards Mitigated:	Avalanche, Dam failure, earthquake, flood, landslide, severe weather, volcano, wildfire					
Existing	1, 4, 5	Operations Manager	LC Emergency Management	High	HMGP, BRIC, FMA	Medium term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	TimeLine
Action LPUD-7—Distribution Line Hardening, including loop feeds.						
Hazards Mitigated:	severe weather, wildfire					
Existing	1, 4, 5, 6	LCPUD Operations Manager	LCPUD	High	HMGP, BRIC	Long term
Action LPUD-8—Develop strategies to provide necessary services in a Disaster						
Hazards Mitigated:	Avalanche, Dam failure, earthquake, flood, landslide, severe weather, volcano, wildfire					
Existing	1, 4, 5, 6	LCPUD Operations Manager	LCPUD	High	HMGP, BRIC	Long term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 13-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority	Grant Pursuit Priority
1	8	Medium	Low	Yes	No	Yes	High	Low
2	1	High	Low	Yes	Yes	Yes	High	High
3	6	High	High	Yes	Yes	No	Medium	High
4	2	High	High	Yes	Yes	Yes	Medium	High
5	3	Medium	High	No	Yes	No	Medium	High
6	8	Medium	High	No	No	No	Low	Low
7	2	High	High	Yes	Yes	No	Medium	High
8	4	High	High	Yes	Yes	Yes	Low	Low

a. See the introduction to this volume for explanation of priorities.

13.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- N/A

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

14.0 THURSTON PUD

14.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Kim Gubbe, Director of Planning and Compliance
1230 Ruddell Rd SE
Lacey WA 98503
Telephone: 360-357-8783 ext.125
e-mail Address: kgubbe@thurstonpud.org

Alternate Point of Contact
Doug Piehl, District Engineer III
1230 Ruddell Rd SE
Lacey WA 98503
Telephone: 360-890-6021
e-mail Address: doug.piehl@thurstonpud.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 14-1.

Table 14-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Kim Gubbe	Director of Planning and Compliance
Doug Piehl, P.E.	District Engineer III
Jim Campbell	Director of Field Operation
Rick Sanchez	Field Technician III
Dan Lovell	Project Management Specialist I
Rich Holmes	Field Technician I

14.2 Jurisdiction Profile

14.2.1 Overview

Thurston PUD was officially formed in 1938 by a vote of the people. Thurston PUD provides water planning and utility services to the citizens of Thurston County, and also owns and operates water systems in Pierce, Lewis, Grays Harbor, and Mason counties.

Thurston PUD's three elected Commissioners assumes responsibility for the adoption of this plan; the Planning and Compliance Department will oversee its implementation.

14.2.2 Service Area

The District serves water systems throughout Lewis County:

- Total Water Systems 54
- Total Customer Connections 678
- Total Estimated People Serviced 1,830

14.2.3 Assets

Table 14-2 summarizes the assets of the District and their value.

Table 14-2. Thurston Public Utility District Assets.

Asset	Value
2533 (2439 St Hwy 508, Onalaska 98532)	$139,375
4199-A (4199 Jackson Hwy, Chehalis 98532)	$105,925
4199-B (4199 Jackson Hwy, Chehalis 98532)	$95,725
4199-C (4199 Jackson Hwy, Chehalis 98532)	$103,725
4199-D (4199 Jackson Hwy, Chehalis 98532)	$93,725
Antrim (114 Topaz Ct, Winlock 98596)	$137,350
Aust (134 Chehalis Valley Dr, Chehalis 98532)	$650,525
Bear (110 Jack Fir Ct E, Packwood 98361)	$76,195
Brockway #1 (106 Walsh Lane, Chehalis 98532)	$115,325
Brockway #2 (106 Walsh Lane, Chehalis 98532)	$116,450
Brookhaven 1 (116 Kim Court, Napavine 98532)	$161,150
Brookhaven 2 (108 Kim Court, Napavine 98532)	$140,675
Brookhaven 3 (119 Karen Court, Napavine 98532)	$136,350
Cougar (110 Jack Fir Ct E, Packwood 98361)	$91,195
Cowlitz (151 Barrier Dr, Salkum 98582)	$136,450
Crow (110 Jack Fir Ct E, Packwood 98361)	$161,395
Eagle (110 Jack Fir Ct E, Packwood 98361)	$99,195
Eastridge 2 (103 Kelli Lane, Centralia 98531)	$127,225
Eastridge 3 (103 Kelli Lane, Centralia 98531)	$139,925
Eastridge W (133 Big Hanaford Rd, Centralia 98531)	$199,775
Foron (2910 Yahtahay St, Centralia 98531)	$147,550
Fuller (103 Prairie Ln, Salkum 98582)	$148,500
Granite #1 (115 Granite Lane, Chehalis 98532)	$109,625
Granite #2 (123 Granite Lane, Chehalis 98532)	$128,125
Harmon Rd (454 Harmon Road, Chehalis 98532)	$126,975
Hemlock (110 Jack Fir Ct E, Packwood 98361)	$84,195
Hidden Meadows I (184 Hidden Meadows, Chehalis 98532)	$173,825
Hidden Meadows II (184 Hidden Meadows, Chehalis 98532)	$164,825
Hidden Meadows III (115 Bridle Path Ln, Chehalis 98532)	$177,875
Hunter 1 (169 Josephine Lp, Onalaska 98570)	$133,950
Hunter 2 (169 Josephine Lp, Onalaska 98570)	$128,700
Hunter 3 (169 Josephine Lp, Onalaska 98570)	$132,200
Hunter 4 (169 Josephine Lp, Onalaska 98570)	$132,700
Johnson (547 Larson Rd, Silvercreek 98585)	$159,450
Maple (110 Jack Fir Ct E, Packwood 98361)	$95,195
Margaret Meadows (118 Margaret Meadows Dr, Centralia 98531)	$121,325
Mountain Lakeview (126 Zola Dr., Cinebar 98533)	$667,800

Asset	Value
Post Lane (149A Post Lane, Chehalis 98532)	$146,150
Raubuck (277 Raubuck Rd, Winlock 98596)	$130,796
Raven (110 Jack Fir Ct E, Packwood 98361)	$76,195
Red Cloud 2 (111 Serene Ln, Onalaska 98570)	$160,825
RES 1 (278 Raubuck Rd, Winlock 98596)	$130,796
RES 2 (279 Raubuck Rd, Winlock 98596)	$126,796
RES 3 (280 Raubuck Rd, Winlock 98596)	$154,950
ROM (104 Rainbow Court W, Morton 98356)	$722,029
Rommerman Rd (108 Clearview Circle, Chehalis 98532)	$144,550
Salkum (151 Barrier Dr, Salkum 98582)	$141,450
Sandra Avenue (2910 Sandra Ave, Centralia 98531)	$308,800
Sward (106 Draws Lane, Winlock 98596)	$257,350
Taylor Cr #1 (107 Taylor Creek Ln, Chehalis 98532)	$121,375
Taylor Cr #2 (107 Taylor Creek Ln, Chehalis 98532)	$145,775
Timberline Village (107 Bearfoot Rd, Packwood 98361)	$4,044,755
Valley Meadows (140 Valley Meadows Lp, Chehalis 98532)	$1,116,820
Whitney (112 Deer Fern Ln, Chehalis 98532)	$171,600
Total:	**$13,961,482**

14.3 Current Trends

Growth trends do not affect the districts assets. All assets are currently available for future growth in the District's service areas.

14.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

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An assessment of administrative and technical capabilities is presented in Table 14-5.

An assessment of education and outreach capabilities is presented in Table 14-6.

Classifications under various community mitigation programs are presented in Table 14-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 14-8.

Table 14-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Thurston PUD Water System Plan – Part A	3/30/2021	Approved by WADOH 10 year plan
SMA Plan Update	3/30/2021	Approved by WADOH 10 year plan

Table 14-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	Yes
If yes, specify: Water Rates	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 14-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
If yes, Department/Position:	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Planning and Compliance/District Engineer Water Only	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Planning and Compliance/District Engineer Water Only	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Planning and Compliance/District Engineer	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: Planning and Compliance/District Engineer	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Planning and Compliance/Director	
Grant writers	Yes
If yes, Department/Position: Planning and Compliance/Director	

Table 14-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Current Approved Plan from Thurston County	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Monthly Newsletters, Call-Em-All Voice or Text Messaging system.	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* One Thurston County Water System has Earthquake Alarm System	Yes

Table 14-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No		
UEI #	Yes	QYTKXNE588N9	1/24/2023
Public Protection	No		
Storm Ready	No		
Firewise	No		

Table 14-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Drought is the highest hazard to the water systems. TPUD is working on accessing all vulnerable wells.	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Medium
Comment: Resolution 10-30 Greenhouse Gas Policy	
Identified strategies for adaptation to impacts	Medium
Comment: Conservation measures, including water reduction incentives, educational materials, and tiered water rates	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

14.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

14.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Annex Thurston County Hazard Mitigation Plan –** Approved in 9/16/2019
- **Water System Plan, Part A -** Includes Emergency Planning, Climate Change Policy and Capital Planning.

14.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Pierce County Hazard Mitigation Plan** —Thurston PUD has water systems throughout Pierce Co and is developing an annex plan.
- **Future Water System Plan Update**—Updated and approved by WADOH every 10 years.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

14.6 Risk Assessment

14.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 14-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 14-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	
Goat Rocks Fire – Wildfire size 6,178 acres		8/8/2022 – 11/1/2022	No Damage, Water System was used for mitigation
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	
Flooding and Mudslides	4635	11/13-11/15/2021	

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	
Biological, COVID-19	4481	1/20/2020-9/11/2023	
Biological, COVID-19	3427	1/20/2020-9/1/2023	
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	Damages Along Cowlitz River, Packwood Area, Costs Unknown
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	Damages Along Cowlitz River, Packwood Area, Costs Unknown
Earthquake	1361	2/28-3/16/2001	
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	
Severe Storms, Flooding	1100	1/26-2/23/1996	
Storms, High Winds, Floods	1079	11/7-12/18/1995	
Severe Storm, High Winds	981	1/20-1/21/1993	
High Tides, Severe Storm	896	12/20-12/31/1990	

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Flooding, Severe Storm	883	11/9-12/20/1990	
Flooding, Severe Storm	852	1/6-1/14/1990	
Severe Storms, Flooding	784	11/22-11/29/1986	
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	
Severe Storms, Mudslides, Flooding	545	12/10/1977	
Severe Storms, Flooding	492	12/13/1975	
Severe Storms, Snowmelt, Flooding	414	1/25/1974	
Severe Storms, Flooding	322	2/01/1972	
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	
Heavy Rains and Flooding	185	12/29/1964	

14.6.2 Hazard Risk Ranking

Table 14-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 14-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Severe Weather		High
2	Flood	39	High
3	Wildfire	36	High
4	Earthquake	32	Medium
5	Volcano	22	Medium
6	Landslide	12	Low
7	Dam Failure	14	Low
8	Avalanche		Low

14.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- No backup power during severe weather events
- Emergency drinking water source after catastrophic event
- Climate Change - Drought

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

14.7 Status of Previous Plan Actions

Table 14-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 14-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Did not participate in previous plan.				

14.8 Hazard Mitigation Action Plan

Table 14-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 14-13 identifies the priority for each action. Table 14-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 14-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action TPUD-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	1,3,5,6	Thurston PUD		High	HMGP, BRIC, FMA	Long Term
Action TPUD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
New and Existing	2,3	Lewis County Emergency Management	Thurston PUD	Low	Staff Time, Water Funds	Short Term
Action TPUD-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power at all water systems.						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	1,4,5,6	Thurston PUD		High	HMGP, BRIC	Long Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action TPUD-4— Implement an emergency preparedness communications and outreach strategy through utility bill inserts. Information campaigns will educate district customers about personal preparedness and disaster resilience						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	3,4	Thurston PUD		Low	Staff Time, Water Funds	Short-Term
Action TPUD-5— Install seismic sensors and automatic valves on the district's largest and regionally most important reservoirs. Automatic shut off valves can preserve water in the event of a water main rupture.						
Hazards Mitigated:	Earthquake					
Existing	1,4,5,6	Thurston PUD		High	Water Fund, HMGP, BRIC	Long-Term
Action TPUD-6— Evaluate the installation of manual operated pumps at all Group A water systems to provide a low-cost means to access groundwater for domestic use during emergencies with prolonged power outages, which could include emergency water sanitation kits and water tree stations, then providing public education on how to use them						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	1,3,4,5,6	Thurston PUD	Customers	High	Staff Time, Water Funds, HMGP, BRIC	Long-Term
Action TPUD-7— Implement a systemwide remote monitoring system to record water pressure and flow rates, reservoir levels, disinfectant levels, power supply, security, and other parameters. Remote sensors improve the district's detection and response during emergencies.						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	1,4,5,6	Thurston PUD		High	Water Funds, HMGP, BRIC	Long-Term
Action TPUD-8— Develop and implement a district-wide wildfire prevention strategy to remove hazardous vegetative fuels around facilities and retrofit wood framed structures with fire-resistant materials.						
Hazards Mitigated:	Wildfire, Severe Weather					
Existing	1,5,6	Thurston PUD		Low	Staff Time, Water Funds, HMGP, BRIC	Short-Term
Action TPUD-9— Evaluate and implement mitigation to vulnerable wells to determine best action to mitigate water outages due to drought which could include, but not limited to: Deeping or replacing of wells, intertying or consolidating systems to give greater redundancy and replace high-leak sections of distribution.						
Hazards Mitigated:	Severe Weather, Drought					
Existing	1,4,5,6	Thurston PUD		Low	Staff Time, HMGP, BRIC	Short-Term
Action TPUD-10— Evaluate and retrofit the District's headquarters to serve as its emergency operations center.						
Hazards Mitigated:	Severe Weather, Drought					
Existing	1,4,5,6	Thurston PUD		Low	Staff Time, HMGP, BRIC	Short-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action TPUD-11— Creating and implementing a communication plan between Lewis County Emergency Response teams and Thurston PUD.						
Hazards Mitigated:	Severe Weather, Flood, Wildfire, Earthquake, Volcano, Landslide, Dam Failure, Avalanche					
Existing	2,3,4	Thurston PUD	Lewis County Emergency Management	Low	Staff Time	Short-Term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 14-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
TPUD-1	4	High	High	Yes	Yes	No	Medium	Medium
TPUD-2	2	Low	Low	Yes	No	Yes	Low	Low
TPUD-3	4	High	High	Yes	Yes	No	Medium	High
TPUD-4	2	Low	Low	Yes	No	Yes	Low	Low
TPUD-5	4	High	High	Yes	Yes	Yes	High	High
TPUD-6	5	High	High	Yes	Yes	Yes	Medium	High
TPUD-7	4	High	Medium	Yes	Yes	Ye	Medium	High
TPUD-8	3	High	Medium	Yes	Yes	Yes	Medium	Medium
TPUD-9	4	High	Low	Yes	Yes	Yes	Medium	Medium
TPUD-10	4	High	Low	Yes	Yes	Yes	Medium	Medium
TPUD-11	3	High	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 14-14. Analysis of Mitigation Actions.

	Action Addressing Hazard, by Mitigation Type[a]							
Hazard Type	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Severe Weather	1,2,3,4,6,7, 8,9,10	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5,8,10	1,4,7,8,9	2,4,6,11
Flood	1,2,3,4,6,7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11
Wildfire	1,2,3,4,6,7, 8	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11
Medium-Risk Hazards								
Earthquake	1,2,3,4,5,6, 7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
Volcano	1,2,3,4,6,7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11
Low-Risk Hazards								
Landslide	1,2,3,4,6,7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11
Dam Failure	1,2,3,4,6,7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11
Avalanche	1,2,3,4,6,7	1,3,5,6,7,8, 9,10	2,4	1,3,5,6,7,9	1,3,4,5,6,7, 8,9,10,11	1,3,5, 8,10	1,4,7,8,9	2,4,6,11

a. See the introduction to this volume for explanation of mitigation types.

14.9 Public Outreach

Table 14-15 lists public outreach activities for this jurisdiction.

Table 14-15. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved
Participating in Lewis County Public Outreach		

14.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

Water System Plan (WSP) – Part A -The WSP was used to support the actions created in the Hazard Mitigation Action Plan.

Thurston PUD Strategic Plan – The Commissioners Strategic Plan was used to develop the plan through their vision, mission and purpose:

- **Vision:** Be leaders, educators, and champions of public utility service quality, water, safety and resource conservation.
- **Mission:** Provide safe, reliable, affordable, and sustainable utility services to the customers we serve.
- **Purpose:** The purpose of PUD No. 1 of Thurston County is to serve the public with quality utility services.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

15.0 LEWIS COUNTY FIRE DISTRICT #1 (ONALASKA)

15.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Brad Flexhaug, Chief
1733 St Rt. 508
PO BOX 100
Onalaska, WA 98579
Telephone: (360) 520-3280
e-mail Address: chieflcfd1@gmail.com

Alternate Point of Contact
Meggie Clark, Admin. Assist.
1733 St Rt. 508
PO BOX 100
Onalaska, WA 98579
Telephone: 360-979-4182
e-mail Address: lcfd1commissioners@tds.net

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 15-1.

Table 15-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Brad Flexhaug	Chief
Meggie Clark	Administrative Assistant

15.2 Jurisdiction Profile

15.2.1 Overview

Lewis County Fire District #1 is a Combination Fire District that has been serving the Onalaska, WA area since the early 1900's. The District serves an area of 82 square miles of mixed-use properties with approximately 3,500 residents. Within our boundaries we have three schools; an elementary, middle and high school. They are built up of children from surrounding communities, with approximately 59% of students coming from low income families.

Onalaska was a booming mill town until the depression when production came on hard times. In June of 1942 the mill closed down permanently causing business and residents to leave the area. Since that time Onalaska has remained a quiet residential bedroom community. The earliest documentation of the Onalaska Fire Department was by Ernie Grandchamp who was the Chief from 1928 until the closing of the mill.

Lewis County Fire District #1 was first formed as a Fire District in December of 1946 and is currently governed by an elected Board of three Fire Commissioners.

Lewis County Fire District #1 currently has 4 career personnel and 20 Volunteer firefighters/first responders/EMT's, some of which have been serving for 40 plus years within the District. These Volunteers handle the District's average of 430 calls a year, responding from home, job, or sleep to meet the needs of our community.

Lewis County Fire District #1 is an all hazards department providing structural fire protection, wildland fire protection, rescue and Emergency Medical Services. It is funded through tax dollars, transport revenues as well as grants.

The Lewis County Fire District #1 assumes responsibility for the adoption of this plan; LCFD1 will oversee its implementation.

The district participates in the Public Protection Class Rating System and currently has a rating of 7.

15.2.2 Service Area

The district service area covers 82 square miles serving a population of 3,521.

15.2.3 Assets

Table 15-2 summarizes the assets of the District and their value.

Table 15-2. Fire District 1 Assets.

Asset		Value
Property		
8 acres of land		$400,000
Equipment		
Fire Engine, Tanker, Ambulance, Hoses and Equipment, Rescue, Support and Command Vehicles		$1,400,000
Fire Engine, Brush Truck, Ambulance and Equipment		$250,000
Fire Engine, Ambulance, Brush Truck and Equipment		$280,000
	Total:	**$1,930,000**
Critical Facilities		
LCFD #1 Station 1- 1733 State Route 508		$3,500,000
LCFD #1 Station 2- 102 Kruger Road		$150,000
LCFD #1- Station 3- 3030 St. Rt. 508		$400,000
	Total:	**$4,050,000**

15.3 Current Trends

Lewis County Fire District #1 has over the past three years increased in call volume by at least 10% per year. The number of residences is growing each year and the local community is currently meeting to propose an Onalaska Sub-Area plan to the County Commissioners to help manage and prepare for growth.

15.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 15-3.

An assessment of fiscal capabilities is presented in Table 15-4.

An assessment of administrative and technical capabilities is presented in Table 15-5.

An assessment of education and outreach capabilities is presented in Table 15-6.

Classifications under various community mitigation programs are presented in Table 15-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 15-8.

Table 15-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan	01/2005	
Emergency Plan		

Table 15-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	Yes
If yes, specify: Federal Grant Programs	

Table 15-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:*	No
Engineers or professionals trained in building or infrastructure construction practices ***If yes, Department/Position:***	No
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:*	No
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:*	No
Grant writers *If yes, Department/Position:*	No

Table 15-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Burning restrictions, weather updates	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Electronic Reader Board	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 15-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	**No**		
DUNS #	**Yes**		
ISO Fire Rating System	Yes/WSRB rating	7	11/28/2022
Storm Ready	No		
Firewise	No		

Table 15-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

15.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

15.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Comprehensive Emergency Management Plan: Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.
- Lewis County MCI plan: Fire District serves as a response agency during an MCI incident.
- Lewis County Mutual Aid agreements: Fire District may request or ask for assistance from other jurisdictions for fire/EMS response. Mutual aid serves as a conduit to be able to share these resources across jurisdictional boundaries.
- Lewis County Radio Procedures manual: Standardization of radio communications between fire agencies within Lewis County.
- Skookumchuck Wind Energy Project/Weyerhaeuser fire plan: Primary responder to this organization/project for fire/EMS response.

15.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Response plans
- Subarea Plans

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

15.6 Risk Assessment

15.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 15-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 15-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

15.6.2 Hazard Risk Ranking

Table 15-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 15-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Wildfire	36	High
2	Severe Weather	34	High
3	Earthquake	30	Medium
4	Flood	26	Medium
5	Volcano	18	Medium
6	Landslide	12	Low
7	Avalanche	0	Low
8	Dam Failure	0	Low

15.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- N/A

15.7 Status of Previous Plan Actions

Table 15-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 15-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Equip specific facility operations with standby power capabilities. Purchase and install batteries, UPS or alternate energy source for critical operations.	X			
Comment: Part of new station				
Assess building for structural integrity to determine strength in withstanding an earthquake, or volcanic ash fallout on roof.		X		
Comment: Completed building of a new station and sold the station in question				
Assess building structural integrity to determine strength in withstanding heavy rain/ wind damage to roof—repair/maintain roofing, upgrade gutters	X			
Comment: Completed building of a new station and sold the station in question				

15.8 Hazard Mitigation Action Plan

Table 15-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 15-13 identifies the priority for each action.

Table 15-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD1-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing	1,5	Lewis County	LCFD1	High	HMGP, BRIC, FMA	Long-Term
Action FD1-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New and Existing	2	LCFD1	Lewis County	Low	Staff Time, General Funds	Long-Term
Action FD1-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including Station 1-1.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing	1,2	LCFD1		High	HMGP, BRIC	Medium-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD1-4— Replace Station 3 interior/exterior lighting.						
Hazards Mitigated: Severe weather, wildfire						
Existing	1	LCFD1		Low	General Funds	Short-Term
Action FD1-5— Assess the long term fuel supply availability. Develop and implement strategies to mitigate loss of fuel supply.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing	1, 2, 6	LCFD1		Medium	General Funds	Medium term
Action FD1-6—Replace outdate fire engines with new equipment.						
Hazards Mitigated: Wildfire, earthquake, severe weather						
New and Existing	1,2,4	LCFD1		High	General Funds, AFG	Medium-Term
Action FD1-7— Establish a warning system for hazardous events.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	1,2,4	LCFD1		Medium	General Funds, BRIC, HMGP	Medium-Term
Action FD1-8—Improve District Radio Communications						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New and Existing	1,2,4,5	Lewis County Radio	LCFD1	High	General funds, HMGP, BRIC, AFG	Medium-Term
Action FD1-9— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 15-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	2	Low	High	No	Yes	No	Low	Low
2	1	Low	Low	Yes	No	Yes	Medium	Low
3	2	High	High	Yes	Yes	No	Medium	Medium
4	1	Low	Low	Yes	No	Yes	High	Low
5	3	High	Medium	Yes	Yes	Yes	High	High
6	3	High	High	Yes	No	Yes	High	Low
7	3	High	Low	Yes	Yes	Yes	High	High
8	4	Medium	High	No	Yes	No	Low	Low
9	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

15.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

16.0 LEWIS COUNTY FIRE DISTRICT #2 (TOLEDO)

16.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Mike Dorothy/ Fire Chief
150 N. Second Street
Toledo, WA 98591
Telephone: 360-864-2366
e-mail Address: chief.tolfire2@toledotel.com

Alternate Point of Contact
Chris Davidson/ Asst. Chief
150 N. Second Street
Toledo, WA 98591
Telephone: 360-864-2366
e-mail Address: cdavidson.tolfire2@toledotel.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 16-1.

Table 16-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Mike Dorothy	Chief
Chris Davidson	Assistance Chief

16.2 Jurisdiction Profile

16.2.1 Overview

Toledo Fire Department was formed by a vote of the people on May 10, 1947. Toledo Fire Department became Lewis County Fire Protection District 2 and became a separate entity from the city of Toledo on February 3, 1986. Lewis County Fire District 2 currently on average has twenty volunteers, who donate their time to serve the citizens of Toledo and outlying areas. Lewis County Fire District 2 extends over ninety-eight square miles and is inhabited by approximately 5,300 residences. Lewis The District is governed by three elected commissioners which serve for a six-year term. Commissioners are responsible for the overall operational and financial determinations of the district. Daily operations are managed by a full-time District Chief, who is employed at the will of the commissioners. Lewis County Fire District 2 has a full staff of EMT/Firefighters that work around-the-clock shifts to provide the citizens of Toledo, WA and surrounding areas of Lewis County with historically quick response times for emergency and fire calls. Among our employees, District 2 also has several active volunteers and continues to grow to keep up with the needs of the community.

The LCFD #2 Fire Commissioners assumes responsibility for the adoption of this plan; LCFD #2 Fire Chief will oversee its implementation.

The district participates in the Public Protection Class Rating System and currently has a rating of #6 in town and a #7 in the county areas.

16.2.2 Service Area

The district service area covers 98 sq miles serving a population of 5,300 residences.

16.2.3 Assets

Table 16-2 summarizes the assets of the district and their value.

Table 16-2. Fire District 2 Assets.

Asset		Value
Property		
880 Tucker Road		$49,300
Equipment		
1 Fire Engine, 1 Tender, 2 Ambulance, MCI Trailer, 1 Brush Engine, 2 Support Vehicles, Hose and Equip. (Station 2-1)		$1,750,000
1 Fire Engine, 1 Ambulance, Hose and Equipment (Station 2-2)		$1,175,000
1 Tender, 1 Brush Engine (Station 3)		$290,000
	Total:	**$3,215,000**
Critical Facilities		
LCFD #2 Station 2-1 (150 N. Second Street)		$1,250,000
LCFD #2 Station 2-2 (880 Tucker Road)		$100,0000
Living Quarters Trailer (880 Tucker Road)		$60,000
LCFD #2 Station 3 (298 Evans Road)		$45,000
	Total:	**$1,455,000**

16.3 Current Trends

The district is seeing unprecedented growth in the housing market. The need for more personnel and updating of apparatus and equipment is needed to provide adequate service to those in need of emergency service.

16.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 16-3.

An assessment of fiscal capabilities is presented in Table 16-4.

An assessment of administrative and technical capabilities is presented in Table 16-5.

An assessment of education and outreach capabilities is presented in Table 16-6.

Classifications under various community mitigation programs are presented in Table 16-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 16-8.

Table 16-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire District falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 16-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 16-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position:	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position:	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position:	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position:	
Surveyors	Yes
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position:	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position:	
Grant writers	Yes
If yes, Department/Position:	

Table 16-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Repost information shared on hazard mitigation	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Reader board, Public Education programs, social media/internet, Lewis County Alerts	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alerts	Yes

Table 16-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	129884797		N/A
Public Protection	Yes	6	2023
Storm Ready	Yes		2023
Firewise	No		N/A

Table 16-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	High
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Medium
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Medium
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Med
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

16.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

16.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Lewis County Fire District #2 Standard Operating Guidelines: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.

- Lewis County Fire District #2 Policy Manual: Provide guidance when dealing with fire department-specific issues and situations, and to help ensure department activities are consistent, effective, efficient, and safe.
- Lewis County Comprehensive Emergency Management Plan: Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

16.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Lewis County Comprehensive Plan
- Toledo Comprehensive Plan
- Response plans

16.6 Risk Assessment

16.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 16-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 16-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
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Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A

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Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

16.6.2 Hazard Risk Ranking

Table 16-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 16-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	38	High
2	Flood	36	High
3	Earthquake	31	High
4	Severe Weather	18	Medium
5	Wildfire	16	Medium
6	Landslide	0	Low
7	Volcano	0	Low
8	Avalanche	0	Low

16.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- During a dam failure, LCFD #2 Main Station, as well as the Evans Rd (St. 2-3) station would be destroyed.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

16.7 Status of Previous Plan Actions

Table 16-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 16-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Relocate stations 2-1, 2-3 out of flood areas			X	1
Comment:				
Stockpile Sandbags	X			
Comment: Sandbags and sand are stockpiled at Main Station.				
Relocate Station 2-1			X	1
Comment: Enter Comment				
Assist with evacuations		X		
Comment: Participated in exercises addressing this.				
Support burn bans	X			
Comment: Ongoing				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Inform public of hazards	X			
Comment: Public Education/Outreach/Social Media				
Station 2-1: Assess building for its ability to withstand all hazards including earthquake, flooding, storm and wildfire			X	3
Comment: Enter Comment				
Station 2-2: Assess building for its ability to withstand all hazards including earthquake, flooding, storm and wildfire			X	3
Comment: Enter Comment				
Station 2-3: Assess building for its ability to withstand all hazards including earthquake, flooding, storm and wildfire			X	3
Comment: Enter Comment				

16.8 Hazard Mitigation Action Plan

Table 16-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 16-13 identifies the priority for each action.

Table 16-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD2-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas, including Stations 2-1 and 2-3 which are at risk of flooding and dam failure.						
Hazards Mitigated: Dam Failure, Flood, Earthquake, Severe Weather, Wildfire						
New and existing	1, 5, 6	LCFD #2	City of Toledo, LC CD	High	General Funds, HMGP, BRIC, FMA	Medium
Action FD2-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam Failure, Flood, Earthquake, Severe Weather, Wildfire, Landslide, Volcano, Avalanche						
New and Existing	2, 3	LCFD #2	N/A	Low	Staff Time, General Funds	Ongoing
Action FD2-3—Assess and study vulnerabilities and impacts on Fire District stations, such as by determining the seismic resiliency of a station. Conduct improvements, modifications, or relocations where necessary.						
Hazards Mitigated: Dam Failure, Flood, Earthquake, Severe Weather, Wildfire, Landslide, Volcano, Avalanche						
New and Existing	1, 2, 6	LCFD #2	N/A	Medium	General Funds, HMGP, BRIC, FMA	Medium
Action FD2-4— Develop a wildfire plan addressing evacuation route, and defensible space using the Firewise framework.						
Hazards Mitigated: Wildfire, Severe Weather, Flood, Dam Failure						
New and Existing	1, 2, 3, 5, 6	LCFD #2	LCDEM	Low	General Funds, HMGP, BRIC	Medium

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD2-5—Purchase of Type 6 (Brush Truck) for warning and response capabilities.						
Hazards Mitigated: Dam Failure, Flood, Earthquake, Severe Weather, Wildfire, Landslide, Volcano, Avalanche						
New	4	LCFD #2	N/A	High	General Funds, AFG, HMGP, BRIC	Medium
Action FD2-6—Purchase of Pumper/Tenders for warning and response capabilities.						
Hazards Mitigated: Dam Failure, Flood, Earthquake, Severe Weather, Wildfire, Landslide, Volcano, Avalanche						
New	4	LCFD #2	N/A	High	General Funds, AFC, HMGP, BRIC	Medium
Action FD6-7— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 16-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Medium	High
2	2	Low	Low	Yes	No	Yes	Low	Low
3	3	High	Med	Yes	Yes	Yes	High	Medium
4	5	Medium	Low	Yes	Yes	Yes	Medium	Medium
5	1	High	High	Yes	Yes	No	Medium	High
6	1	High	High	Yes	Yes	No	Medium	High
7	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

16.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- Lewis County Fire District #3 Standard Operating Guidelines: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.
- Lewis County Fire District #3 Policy Manual: Provide guidance when dealing with fire department-specific issues and situations, and help ensure department activities are consistent, effective, efficient, and safe.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

17.0 LEWIS COUNTY FIRE DISTRICT #3 (MOSSYROCK)

17.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Doug Fosburg, Chief
PO Box 127
Mossyrock, WA
Telephone: 360-983-3456
e-mail Address: fd3@tds.net

Alternate Point of Contact
Amanda Blankenship, Administrator
PO Box 127
Mossyrock, WA
Telephone: 360-983-3456
e-mail Address: fd3clerk@tds.net

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 17-1.

Table 17-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Doug Fosburg	Chief

17.2 Jurisdiction Profile

17.2.1 Overview

Lewis County Fire District #3 is a volunteer fire district. We were established by a vote of the people in 1945 to provide fire protection and EMS service. We currently have two full time employees and 30 volunteers. Our funding source is property tax and an EMS levy. We have a three-member elected board of commissioners who would have authority to adopt this Hazard mitigation plan; the Fire Chief will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of #6 within the city limits of Mossyrock and #8 outside of the city limits.

17.2.2 Service Area

The District #3 service area covers 49 square miles, serving a population of 2,337.

17.2.3 Assets

Table 17-2 summarizes the assets of the District and their value.

Table 17-2. Fire District 3 Assets.

Asset	Value
Property	
7 acres of land	$120,320
Equipment	
2 Fire Engine, Support Vehicle, 2 Ambulance, Hoses and Equipment (Station 3-1)	$1,329,500

Asset		Value
Fire Truck, Brush Truck, Hoses, and Equipment (Station 3-2)		$500,000
Fire Engine, Brush Truck, Hoses, and Equipment (Station 3-3)		$400,000
	Total:	**$2,229,500**
Critical Facilities		
LCFD #3 Station 3-1 (238 Mossyrock Rd East)		$2,018,720
LCFD #3 Station 3-2 (235 Flynn Road)		$535,680
LCFD #3 Station 3-3 (758 Green Mountain Road)		$214,272
	Total:	**$2,768,672**

17.3 Current Trends

Lewis County Fire District #3 protects 2,337 people who live in the City of Mossyrock and are spread out over a 49 square mile response area. Our 26 volunteer firefighters respond to approximately 360 calls per year, from our 3 stations. We have experienced a 30% increase in call volume over the past 6 years. We provide commercial, residential, industrial, and wildland fire protection and run first responder rescue vehicles. 82% of our service area has no fire hydrants or public water supply. We provide protection for two hydroelectric projects on our local Cowlitz River, which generate the electricity needed to supply nearly 1.5 million homes. More than 2.6 million automobiles travel US Highway 12 each year. The main east west highway annually carrys nearly 7 million occupants.

17.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 17-3.

An assessment of fiscal capabilities is presented in Table 17-4.

An assessment of administrative and technical capabilities is presented in Table 2-6.

An assessment of education and outreach capabilities is presented in Table 17-6.

Classifications under various community mitigation programs are presented in Table 17-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 17-8.

Table 17-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire District falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 17-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 17-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Lewis County Emergency Management	
Surveyors	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: GIS Division of Public Works	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Lewis County DEM	
Grant writers	Yes
If yes, Department/Position: Resource Solutions and Lewis County Departments	

Table 17-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes
If yes, briefly describe: Linked to County Webpage	
Do you use social media for hazard mitigation education and outreach?	No
If yes, briefly describe:	

Criterion	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Mossyrock Planning Commission	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Lewis County Alert and Preparedness Fairs	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alert	Yes

Table 17-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	**N/A**	**N/A**	**N/A**
DUNS #	**Yes**	**142978308**	**N/A**
Public Protection	Yes	8,6	2019
Storm Ready	Yes		2020
Firewise	No	N/A	N/A

Table 17-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Medium
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Medium
Participation in regional groups addressing climate risks *Comment:*	Medium
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Medium
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Medium
Political support for implementing climate change adaptation strategies *Comment:*	Medium

Criterion	Jurisdiction Rating[a]
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	High
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

17.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

17.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Lewis County Fire District #3 Standard Operating Guidelines: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.
- Lewis County Fire District #3 Policy Manual: Provide guidance when dealing with fire department-specific issues and situations, and to help ensure department activities are consistent, effective, efficient, and safe.
- **Lewis County Comprehensive Emergency Management Plan:** Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

17.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Mossyrock Comprehensive Plan**
- **Lewis County Comprehensive Plan**
- **Response Plans**

17.6 Risk Assessment

17.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 17-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 17-9. Past Natural Hazard Events.

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

17.6.2 Hazard Risk Ranking

Table 17-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 17-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	36	High
2	Wildfire	34	High
3	Earthquake	32	Medium
4	Severe Weather	18	Medium
5	Flood	15	Low
6	Avalanche	0	Low
7	Landslide	0	Low
8	Volcano	0	Low

17.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The district's wildland fire fighting capabilities have been severely decreased due to the loss of our type 6 brush truck.
- The District Tenders have aged out and we have had to decrease the amount of available water for fire protection by 4,000 gallons.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

17.7 Status of Previous Plan Actions

Table 17-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 17-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Search out grants or bonds or aid to build new fire station or adequate size	X			
Comment: Completed construction of new fire station in 2021				
Assess building for structural integrity to determine strength in withstanding an earthquake, or volcanic ash fallout on roof.	X			
Comment: New Fire Station built to be used as a shelter building during periods of disasters				

17.8 Hazard Mitigation Action Plan

Table 17-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction.

Table 17-13 identifies the priority for each action.

Table 17-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LCFD3-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Dam Failure, Wildfire, Earthquake, Severe Weather						
Existing	1, 5, 6	LCFD #3	LCFD #3 Fire Commissioners	High	HMGP, BRIC, FMA	Long-term
Action LCFD3-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam Failure, Wildfire, Earthquake, Severe Weather, Flood Avalanche, Landside, Volcano						
New and Existing	2, 3	LCFD #3	LC DEM	Low	Staff Time, General Funds	Ongoing
Action LCFD3-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including Station 3-2 Flynn Road and Station 3-3 Green Mountain Road.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	1, 6	LCFD #3	LCFD #3 Fire Commissioners	High	General Funds, HMGP, BRIC	Medium-term
Action LCFD3-4—Purchase a replacement Type 6 Engine (Brush Truck) for warning and response capabilities.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	3, 4	LCFD #3	LCFD #3 Fire Commissioners	High	General Funds, AFG, HMGP, BRIC	Medium-term
Action LCFD3-5—Purchase Tenders to be deployed to our substations to increase available “on hand” water supply.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	6	LCFD #3	LCFD #3 Fire Commissioners	High	General Funds, AFG, HMGP, BRIC	Medium-term
Action LCFD3-6— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 17-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
LCFD3-4	2	Medium	High	Yes	Yes	No	High	High
LCFD3-5	1	Medium	High	Yes	Yes	No	High	High
LCFD3-3	2	Medium	High	Yes	Yes	No	High	High
LCFD3-1	3	High	High	Yes	Yes	No	Low	Low
LCFD3-2	2	Low	Low	Yes	No	Yes	Low	Low
LCFD3-6	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

17.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- Lewis County Fire District #3 Standard Operating Guidelines: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.
- Lewis County Fire District #3 Policy Manual: Provide guidance when dealing with fire department specific issues and situation, and to help ensure department activities are consistent, effective, efficient, and safe.

The following outside resources and references were reviewed:

- Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- Lewis County Municipal Code
- Lewis County Flood Damage Prevention Ordinance
- Lewis County Shoreline Management Program
- Lewis County Critical Areas Ordinance
- Urban Wildland Interface Plan
- Lewi County Comprehensive Emergency Management Plan
- Lewis County Threats and Hazards Identification Risk Assessment
- Cowlitz River Flood Zone District Plan
- Cowlitz Falls Hydroelectric Project
- Tacoma Power Hydroelectric Project (Mayfield Dam and Mossyrock Dam)

18.0 LEWIS COUNTY FIRE DISTRICT #4 (MORTON)

18.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Bill Reynolds, Chief
214 2nd Street/ PO Box 427
Morton, WA 98356
Telephone: 253-951-7598
e-mail Address: lcfd4chief@gmail.com

Alternate Point of Contact
Holly Cantrell, District Secretary
214 2nd Street/ PO Box 427
Morton, WA 98356
Telephone: 360-496-5183
e-mail Address: lcfd4sec@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 18-1.

Table 18-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Bill Reynolds	Fire Chief
Holly Cantrell	District Secretary

18.2 Jurisdiction Profile

18.2.1 Overview

Lewis County Fire District #4 is a special purpose district created in 1952 to provide fire protection services. A 3-member elected board of Commissioners Governs the District. The Board assumed responsibility for the adoption of this plan; the Fire Chief will oversee its implementation. The District currently has 11 volunteers and 3 part time staff. Funding comes primarily from a general levy of property tax and fees received from aid services. The district does not have an EMS levy.

The District participates in the Public Protection Class Rating System and currently has a rating of # 7.

18.2.2 Service Area

The District service area covers 70 square miles, serving a population of 2,000.

18.2.3 Assets

Table 18-2 summarizes the assets of the District and their value.

Table 18-2. Fire District 4 Assets.

Asset		Value
Property		
214 2nd Street, Morton, WA		$325,000
Equipment		
10 Vehicles		$962,000
	Total:	**$1,287,000**
Critical Facilities		
214 2nd Street, Morton, Wa - Fire Station		$325,000
	Total:	**$325,000**

18.3 Current Trends

Fire/EMS calls are rising. Population growth is stable at this time. Travel impacts are increasing with major highways running through the district. It is expected that Fire/EMS calls will increase in the coming years.

18.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 18-3.

An assessment of fiscal capabilities is presented in Table 18-4.

An assessment of administrative and technical capabilities is presented in Table 18-5.

An assessment of education and outreach capabilities is presented in Table 18-6.

Classifications under various community mitigation programs are presented in Table 18-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 18-8.

Table 18-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire District falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 18-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 18-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Lewis County Community Development & Public Works, City of Morton	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Lewis County Community Development & Public Works, City of Morton	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Lewis County Community Development & Public Works, City of Morton	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Lewis County Emergency Management	
Surveyors	Yes
If yes, Department/Position: Lewis County Community Development & Public Works, City of Morton	
Personnel skilled or trained in GIS applications	Yes
If yes, Department/Position: GIS Division of Lewis County	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Lewis County Emergency Management	
Grant writers	No
If yes, Department/Position:	

Table 18-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website?	No
If yes, briefly describe:	
Do you use social media for hazard mitigation education and outreach?	No
If yes, briefly describe:	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
If yes, briefly describe:	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
If yes, briefly describe: Our website lcfd4.com, Social Media, Community Board	
Do you have any established warning systems for hazard events?	Yes
If yes, briefly describe: Lewis County Alerts	

Table 18-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS # 16646534	Yes		
Public Protection	Yes	7	2023
Storm Ready	No		
Firewise	No		

Table 18-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating*a*
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negatively impacted *Comment:*	Low
Public Capacity	
Local residents' knowledge of and understanding of climate risk *Comment:*	Low
Local residents' support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Low
Local economy's current capacity to adapt to climate impacts *Comment:*	Low

Criterion	Jurisdiction Rating*a*
Local ecosystem's capacity to adapt to climate impacts *Comment:*	Low

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

18.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

18.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Comprehensive Emergency Management Plan:** Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

18.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Washington State Department of Transportation Emergency Plans**
- **United State Forest Service**
- **Department of Natural Resources**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

18.6 Risk Assessment

18.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 18-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 18-9. Past Natural Hazard Events.

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

18.6.2 Hazard Risk Ranking

Table 18-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 18-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Severe Weather	36	High
2	Wildfire	34	High
3	Earthquake	32	Medium
4	Flood	18	Medium
5	Landslide	15	Low
6	Dam Failure	0	Low
7	Volcano	0	Low
8	Avalanche	0	Low

18.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- LCFD4 is housed in an 80-year-old building that may or may not come down in an earthquake.
- LCFD4's building is not in a flood area but there are many residents of the district that are in a flood area. These residents flood when the Tilton river gets too high.
- LCFD4 is located in a rural area. There is possibility of landslides and wildfires.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

18.7 Status of Previous Plan Actions

Table 18-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 18-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Not applicable. Did not participate in previous plan.				

18.8 Hazard Mitigation Action Plan

Table 18-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 18-13 identifies the priority for each action. Table 18-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 18-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline*a*
Action FD4-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Earthquake, Severe Weather						
New	1	LCFD4	City of Morton Public Works	High	HMGP, BRIC, FMA	Long-Term
Action FD4-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Earthquake, Flood, Severe Weather, Wildfire						
Existing	4,3	LCFD4		Low	Staff Time, General Funds	Ongoing
Action FD4-3- Purchase generators for critical facilities and infrastructure the lack adequate backup power						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	1	LCFD4		Medium	HMGP, BRIC, General Funds	Medium-Term
Action FD4-4— Inspections to evaluate structural integrity to withstand earthquakes and snow/ash loading on roof.						
Hazards Mitigated: Earthquake, Severe Weather, volcano						
Existing	1,3,6	LCFD4	Lewis County Community Dev.	Low	Staff Time, General Funds	Medium-Term
Action FD4-5—Dependable water supply- The City of Morton provides a full service of water to and for the fire department to ensure they have sufficient water supply for fire prevention and support.						
Hazards Mitigated: Earthquake, Severe Weather, Volcano, Wildfire						
Existing	1,6	LCFD4	City of Morton Public Works	Low	General Funds	Short-Term
Action FD4-6—Maintain supple of N95 and Extra Filters for Emergency Vehicles						
Hazards Mitigated: Volcano, Wildfire						
New	2,3	LCFD4		Low	General Funds	Short Term
Action FD4-7—Purchase UTV to get around when roads are closed or no longer exist						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New	1	LCFD4		High	General Funds, HMGP, FEMA	Medium-Term
Action FD4-8—Maintain defensibly space around Fire department facilities and secure building contents						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather						
New	6	LCFD4		Low	Staff Time, General Funds BRIC, HMGP, CDWG	Ongoing
Action FD4-9—Replace aging fire station with a new station that will withstand earthquakes						
Hazards Mitigated: Earthquake						

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline*a*
New	6	LCFD4		High	General Funds, BRIC, HMGP	Long-Term
Action FD4-10—Develop a flood response plan and assess how the District can best serve its constituents, especially vulnerable population that lives in frequently flooded areas.						
Hazards Mitigated:	Flood					
New	1,2,3,4,6	LCFD4	City of Morton, Public Works, Lewis County CD	Low	Staff Time, General Funds	Ongoing
Action FD4-11— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated:	Wildfire					
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 18-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority*a*	Grant Pursuit Priority*a*
1	1	High	High	Yes	Yes	No	High	High
2	2	Medium	Low	No	No	Yes	Low	Low
3	1	High	High	Yes	Yes	No	High	High
4	3	Medium	Low	No	No	Yes	Low	Low
5	2	Medium	Low	No	No	Yes	Low	Low
6	2	Medium	Low	No	No	Yes	Low	Low
7	1	High	High	Yes	Yes	No	High	High
8	1	Medium	Low	No	No	Yes	Low	Low
9	1	High	High	Yes	Yes	No	Low	High
10	5	High	Low	Yes	Yes	Yes	High	Low
11	See priority table in Volume 1 Section 4.10							

a. See the introduction to this volume for explanation of priorities.

Table 18-14. Analysis of Mitigation Actions.

Hazard Type	Action Addressing Hazard, by Mitigation Type*a*							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
Medium-Risk Hazards								
Earthquake	FD4-1,2,3,4,5,7,8	FD4-1,2,3,4,8	FD4-2	FD4-2,8	FD4-1,2,8	FD4-1		FD4-1,2,4
Flood	FD4-2,3,7	FD4-3	FD4-2	FD4-2	FD4-2,3,7			FD4-2
Landslide	FD4-3,7	FD4-3			FD4-3,7			

Hazard Type	Action Addressing Hazard, by Mitigation Type*a*							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
Severe Weather	FD4-1,2,3,4,5,7,8	FD4-3,4,8	FD4-2	FD4-2,8	FD4-1,2,3,5,7	FD4-1		FD4-1,2,4
Wildfire	FD4-2,3,5,6,7,8	FD4-3.8	FD4-2	FD4-2,8	FD4-1,2,3,5,6,7			FD4-2
Low-Risk Hazards								
Avalanche	FD4-3,7	FD4-3			FD4-3,7			
Dam Failure	FD4-3,7	FD4-3			FD4-3,7			
Volcano	FD4-3,4,5,6,7	FD4-3,4			FD4-3,5,6,7			FD4-4

a. See the introduction to this volume for explanation of mitigation types.

18.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

19.0 LEWIS COUNTY FIRE DISTRICT #6 (CHEHALIS)

19.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Paul Patterson, Fire Chief
2123 Jackson Hwy
Chehalis, WA 98532
Telephone: 360-669-9392
e-mail Address: ppatterson@lcfd6.org

Alternate Point of Contact
Kylie Dyas, Executive Secretary
2123 Jackson Hwy
Chehalis, WA 98532
Telephone: 360-748-6019
e-mail Address: kfranz@lcfd6.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 19-1.

Table 19-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Paul Patterson	Fire Chief
PK Smith	Asst. Chief

19.2 Jurisdiction Profile

19.2.1 Overview

Lewis County Fire District 6 was established in 1956 to serve the community of rural Chehalis, including, but not limited to much of the Urban Growth Area. We also serve the city of Adna. It is a fire service agency that also provides advanced life support and basic life support by means of cross-trained firefighters. Our agency is comprised of 11 full-time firefighters, 4 are paramedics and the other 7 are emergency medical technicians. We have a full-time Fire Chief and a full-time executive secretary. We are funded 100% through county tax dollars. Our governing body is made up of 3 Fire Commissioners. This body has our district's adaptive authority.

The Board of Fire Commissioners assumes responsibility for the adoption of this plan; The Fire Chief will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 6.

19.2.2 Service Area

Lewis County Fire District 6 serves a portion of Lewis County. Our portion of service area covers 145 sq. miles, serving a population of 8,572.

19.2.3 Assets

Table 19-2 summarizes the assets of the District and their value.

Table 19-2. Fire District 6 Assets.

Asset		Value
Property		
8.47 acres of land		$3,365,100
Equipment		
2001 Dodge Brush Truck		$14,000
2000 Freightliner Pumper		$326,500
2001 Ford Ambulance		$136,500
2005 Peterbuilt Tender		$326,000
2008 Peterbuilt Tender		$324,700
2008 Peterbuilt Pumper		$292,300
2006 Bauer Air Trailer		$96,000
2007 Peterbuilt Pumper		$376,000
2007 Peterbuilt Pumper		$376,000
2013 Chevy Tahoe		$60,000
2013 Ford Ambulance		$165,000
2015 Chevy Tahoe		$65,000
2017 Pierce Pumper		$611,000
2005 Interstate Trailer		$6,000
2007 Snow Trailer		$5,000
	Total:	**$3,180,000**
Critical Facilities		
Fire Station 2123 Jackson Hwy Chehalis, WA 98532		$1,800,000
Fire Station 268 Dieckman Rd. Chehalis, WA 98532		$876,000
Fire Station 736 Logan Hill Rd. Chehalis, WA 98532		$315,000
Fire Station 108 Galaxie Rd. Chehalis, WA 98532		$117,000
	Total:	**$3,108,000**

19.3 Current Trends

With the continued growth of the housing market, coupled with the construction of multi-occupancy townhomes, our district anticipates a slight rise in population. There is an anticipated growth rate in medical calls, due to population growth. Fire service calls are anticipated to stay the same due to fire prevention activities.

19.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of

Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 19-3.

An assessment of fiscal capabilities is presented in Table 19-4.

An assessment of administrative and technical capabilities is presented in Table 19-5.

An assessment of education and outreach capabilities is presented in Table 19-6.

Classifications under various community mitigation programs are presented in Table 19-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 19-8.

Table 19-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire District falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 19-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 19-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:* Lewis County Community Development & Public Works	Yes
Engineers or professionals trained in building or infrastructure construction practices ***If yes, Department/Position:*** Lewis County Community Development & Public Works	Yes
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:* Lewis County Community Development & Public Works	Yes
Staff with training in benefit/cost analysis *If yes, Department/Position:* Lewis County Department of Emergency Management	Yes
Surveyors *If yes, Department/Position:* Lewis County Community Development & Public Works	Yes
Personnel skilled or trained in GIS applications *If yes, Department/Position:* Lewis County Community Development & Public Works	Yes
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:* Lewis County Department of Emergency Management	Yes
Grant writers *If yes, Department/Position:* Fire/Chief Paul Patterson & LC Departments	Yes

Table 19-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Links to Lewis County Department of emergency Management	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Primarily burn restriction notifications	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Lewis County Board of Fire Commissioners	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis county Alerts	Yes

Table 19-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes	1939541	
DUNS #	Yes	613201243	
Public Protection	Yes	6	11/1/2023
Storm Ready	No		
Firewise	No		

Table 19-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Medium
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

19.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

19.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Annual Flood Meeting/Plan Integration—**Continued development and implementation of emergency services targeting reduction of life and property loss due to flooding in the area.

19.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Fire response plans**
- **County/City Comprehensive Plans**
- **Dam failure emergency action plan**

19.6 Risk Assessment

19.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 19-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 19-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
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Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

19.6.2 Hazard Risk Ranking

Table 19-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 19-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	36	High
2	Severe Weather	34	High
3	Earthquake	18	Medium
4	Wildfire	18	Medium
5	Avalanche	0	Low
6	Volcano	0	Low
7	Dam Failure	0	Low
8	Landslide	0	Low

19.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Flooding
- Wildfires

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

19.7 Status of Previous Plan Actions

Table 19-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 19-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Did not participate in previous plan				

19.8 Hazard Mitigation Action Plan

Table 19-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 19-13 identifies the priority for each action.

Table 19-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD6-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood					
Existing	1,5,6	LCFD 6	N/A	High	HMGP, BRIC, FMA	Medium-term
Action FD6-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New and Existing	2	LCFD 6	LCDEM	Low	Staff Time, General Funds	Medium-Term
Action FD6-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	4,6	LCFD 6	N/A	Medium	Grants/General Funds, BRIC, HMGP	Medium-Term
Action FD6-4— Improve Flood Risk Assessment by developing a dam failure study and emergency action plan.						
Hazards Mitigated:	Flood, avalanche, dam failure.					
New and existing	1,2,3,4	LCFD 6	LCDEM	Low	General Funds	Medium-Term
Action FD6-5— Map and assess vulnerability to landslides and avalanches.						
Hazards Mitigated:	Landslides, avalanches					
New and existing	1,2,3,4,6	LCDEM	LCFD 6	Low	General Funds, grants	Medium-Term
Action FD6-6—Enhance wildfire mitigation strategies through mapping and assessment of vulnerable areas.						
Hazards Mitigated:	Wildfires					
New and existing	1,2,3	LCFD 6	LCDEM	Low	General Funds	Medium-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD6-7—Reduce wildfire risk to people and structure through land use planning and WUI code implementation.						
Hazards Mitigated: Wildfires						
New and existing	1,2,3,5	LC Community Development	LCFD 6	Low	General Funds	Short-term
Action FD6-8—Conduct vegetation maintenance to reduce wildfire risk.						
Hazards Mitigated: Wildfires						
Existing	1,5,6	LCFD 6	N/A	Medium	General Funds, HMGP, BRIC, CDWG	Medium-Term
Action FD6-9— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 19-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Medium	High
2	1	High	Low	Yes	No	Yes	Low	Low
3	2	High	Medium	Yes	Yes	No	Medium	High
4	4	High	Low	Yes	Yes	Yes	Medium	High
5	5	High	Low	Yes	Yes	Yes	Medium	Low
6	3	High	Low	Yes	No	Yes	Medium	Low
7	4	High	Low	Yes	Yes	Yes	Medium	Low
8	3	High	Medium	Yes	Yes	Yes	Medium	Low
9	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

19.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

20.0 LEWIS COUNTY FIRE DISTRICT #8 (SALKUM)

20.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 20-1.

Table 20-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Duran McDaniel	Chief
Shari Keim	Administrator

20.2 Jurisdiction Profile

20.2.1 Overview

The Lewis County Fire District 8 assumes responsibility for the adoption of this plan; Lewis County Fire District 8 will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 6 or 8, dependent on location.

20.2.2 Service Area

The District service area covers 188 square miles serving a population of 4,000 individuals. The population increases to around 10,000 during the summer. The area contains three full zip codes, Salkum, Ethel and Cinebar, large parts of three others, Silvercreek, Mossyrock and Onalaska, and pieces of Toledo and Chehalis zip codes. The area is rural with logging and recreation being the major interests. There are five convenience stores scattered around the area and three gas stations. We have only one area of 1.5 square miles with fire hydrants. Our access to hospitals are 20 minutes to the east and 30 minutes to the west. The services in the area are minimal.

20.2.3 Assets

Table 20-2 summarizes the assets of the District and their value.

Table 20-2. Fire District 8 Assets.

Asset	Value
Property	
Station 81 2490 U.S. Highway 12 Salkum 2.27 acres	$54,000
Station 82 123Gershick Rd. Silvercreek .2 acres	32,000
Station 83 109 Brim Rd. Onalaska .17 acres	37,000
Station 84 110 Justus Rd. Cinebar 1.18 acres	$51,000
Station 85 343 Winston Creek Rd. Mossyrock 2.0 acres	$44,000
Total:	**$218,000**
Equipment	
Station 81: 2 Ambulances,1 Rescue Truck, 1 Engine/Tender, 2 Support Vehicles	$1,065,500
Station 82: 1 Ambulance, 1 Engine	$230,000
Station 83: 1 Engine, 1 Engine/Tender	$540,000
Station 84: 1 Engine 4x4, 1 Engine/Tender, 1 Support vehicle	$620,000
Station 85: 1 Engine 4x4, 1 Engine/ Tender, 1 Pickup, 1 Ambulance	$760,000
Total:	**$3,434,300**
Critical Facilities	
Fire Station 81 (2490 US Hwy 12, Salkum)	$1,335,000
Fire Station 82 (123 Gershick Road, Silvercreek)	$250,000
Fire Station 83 (109 Brim Road, Ethel)	$250,000
Fire Station 84 (110 Justus Road, Cinebar)	$675,000
Fire Station 85 (343 Winston Creek Road, Mossyrock)	$400,000
Total:	**$2,910,000**

20.3 Current Trends

There are multiple categories that have been on an increase for the past several years. Lewis County Fire District 8 serves 188+- square miles. We have experienced a high influx of residential homes being built. This has greatly increased the population in our district. The increasingly dry conditions are bringing an upturn of wildfires and fire danger to homes and buildings. Within our district we have the Cowlitz River and Mayfield Lake which increases amount of people coming to our district. Hwy 12 is the main corridor, the traffic has had a significant increase of personal vehicles, along with increase of commercial vehicles. All the uptick of these trends is causing an increased strain on our limited budget and resources.

20.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of

Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 20-3.

An assessment of fiscal capabilities is presented in Table 20-4.

An assessment of administrative and technical capabilities is presented in Table 20-5.

An assessment of education and outreach capabilities is presented in Table 20-6.

Classifications under various community mitigation programs are presented in Table 20-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 20-8.

Table 20-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire District falls within the county
Emergency Plan (see County CEMP)	12/2023	Last adopted 2016

Table 20-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No

Table 20-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Lewis County Emergency Management	
Surveyors	Yes
If yes, Department/Position: Lewis County Community Development and Public Works	
Personnel skilled or trained in GIS applications	Yes

If yes, Department/Position: GIS Division of Public Works	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Lewis County DEM	
Grant writers	No
If yes, Department/Position:	

Table 20-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Lewis County Alert and Preparedness Fairs	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alert	Yes

Table 20-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	Yes	618354554	N/A
Public Protection	Yes	6/8	2019
Storm Ready	No		N/A
Firewise	No		N/A

Table 20-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Medium
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment:	
Participation in regional groups addressing climate risks	Medium
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

20.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

20.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County Fire District #8 Standard Operating Guidelines:** Provides instructions on how to perform a specific task or operation for firefighting activities.
- **Lewis County Fire District #8 Policy Manual:** Provide guidance when dealing with fire department-specific issues and situations, and to help ensure department activities are consistent, effective, efficient, and safe.
- **Lewis County Comprehensive Emergency Management Plan:** Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

20.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Fire Response Plans**
- **Evacuation plans**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

20.6 Risk Assessment

20.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 20-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 20-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

20.6.2 Hazard Risk Ranking

Table 20-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 20-10. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Dam Failure	32	High
2	Wildfire	31	High
3	Earthquake	30	High
4	Volcano	30	High
5	Flood	16	Medium
6	Severe Weather	15	Low
7	Landslide	3	Low
8	Avalanche	2	Low

20.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Uptick of residential structures in the wildland interface. Lewis County Fire District 8 would benefit greatly by having two (2) type 6 brush trucks. All our Engines qualify as Type 1 structural which can be detrimental in wildland firefighting.
- Lewis County Fire District 8 only have access to 2 small municipal water systems which requires us to source our water from creeks and rivers. These creeks and rivers vastly diminished in the summer due to our increased temperatures. Water storage tanks at our stations would help alleviate some of our challenges during warm weather.
- Placing a generator at our stations, located on the Winston Creek Rd and Brim Rd, would provide power for our water system, heat for freezing weather giving us the ability to shelter people.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

20.7 Status of Previous Plan Actions

Table 20-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 20-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Study dam failure predictions.	Yes			
Comment: Completed in 2021				
Assess building for structural integrity to determine strength in withstanding an earthquake, or volcanic ash fallout on roof.			X	6
Comment:				
Determine if any of the buildings could be damaged by trees or falling power poles.	Yes			
Comment: Completed in 2016				

20.8 Hazard Mitigation Action Plan

Table 20-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 20-13 identifies the priority for each action.

Table 20-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD8-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Dam Failure, Wildfires, Earthquake, Severe Weather					
Existing	1,5,6	LCFD8	LCFD8 Commissioners	High	HMGP, BRIC, FMA	Long-term
Action FD8-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Wildfire					
New and Existing	2,3	LCFD8	LCFD8 Commissioners	Low	Staff Time, General Funds	Short-term
Action FD8-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including Station 8-5 at Winston Creek Rd and at Station 8-3 at Brim Rd.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New and existing	1,6	LCFD8	LCFD8 Commissioners	High	General Funds, HMGP, BRIC, Grants	Medium-term
Action FD8-4—Purchase two 4x4 Type 6 Brush Trucks to support wildfire response.						
Hazards Mitigated:	Wildfire					
New and existing	3,4	LCFD8	LCFD8 Commissioners	High	General Funds, AFG, HMGP, BRIC, Grants	Medium- term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD8-5—Purchase stand-by water tanks to increase the availability of water in remote/non-hydrant areas.						
Hazards Mitigated:	Wildfire					
New and existing	6	LCFD8	LCFD8 Commissioners	Medium	General Funds Grants	Medium-term
Action FD8-6— Assess building for structural integrity to determine strength in withstanding an earthquake, or volcanic ash fallout on roof. Also assess for external vulnerabilities such as falling trees. Improve, modify, or relocate structure as determined necessary.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	6	LCFD8	LCFD8 Commissioners	High	General Funds, HMGP, BRIC Grants	Medium-term
Action FD8-7— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated:	Wildfire					
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 20-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	Med	High	No	Yes	No	Low	Med
2	2	Med	Low	Yes	No	Yes	Low	N/A
3	2	High	High	Yes	Yes	No	High	High
4	2	High	High	Yes	Yes	No	High	High
5	1	High	Low	No	Yes	Yes	High	Med
6	1	High	Medium	Yes	Yes	No	Medium	Med
7	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

20.9 Public Outreach

Table 20-14 lists public outreach activities for this jurisdiction.

Table 20-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
We met with Salmon Creek area over Wildfire and safety issues	7-2023	40
We met with the Cinebar area over Wildfire and safety issues	10-2023	20

20.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

Lewis County Municipal Code
Lewis County Flood Damage Prevention Ordinance
Lewis County Shoreline Management Program
Lewis County Critical Areas Ordinance
Urban Wildland Interface Plan
Lewis County Comprehensive Emergency Management Plan
Lewis County Threats and Hazards Identification Risk Assessment
Cowlitz River Flood Zone District Plan
Tacoma Power Hydroelectric Project Mayfield Dam

21.0 LEWIS COUNTY FIRE DISTRICT #10 (PACKWOOD)

21.1 Local Hazard Mitigation Planning Team

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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 21-1.

Table 21-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Lonnie Goble	Fire Chief
Barbra Write	

21.2 Jurisdiction Profile

21.2.1 Overview

Lewis County Fire District #10 is a volunteer fire department that has been serving the Packwood area since 1985. The district covers 360 square miles and is surrounded by a National Forest, and serves a fluctuating population between 4,440-30,000 individuals. The fluctuation in population is due to the number of vacation homes and outdoor activities in the area.

The Lewis County Fire District #10 Board Commissioners assume responsibility for the adoption of this plan; Lewis County Fire District #10 will oversee its implementation.

The district participates in the Public Protection Class Rating System and currently has a rating of 6.

21.2.2 Service Area

The District service area covers 360 square miles serving a population of 4,440-30,000.

21.2.3 Assets

Table 21-2 summarizes the assets of the District and their value.

Table 21-2. Fire District 10 Assets.

Asset		Value
Property		
9 acres of land		$500,000
Equipment		
Fire Engine, 2 Tanker, 2 Ambulances, 1 Rescue and Equipment, 2 Brush Trucks (Station 10-1)		$2,500,000
Fire Engine, Hoses, and Equipment, Aircraft Rescue Truck and Equipment (Station 10-2)		$275,000
Fire Engine, Hoses, and Equipment (Station 10-3)		$300,000
	Total:	**$3,075,000**
Critical Facilities		
LCFD #14 Station 10-1 (12953 US Hwy 12)		$2,300,000
LCFD #10 Station 10-2 (483 Cannon Road)		$700,000
LCFD #10 Station 10-3 (Mt. View Drive)		$250,000
	Total:	**$3,250,000**

21.3 Current Trends

Fire/EMS calls are stable at this time. However, population growth and seasonal populations are growing significantly – doubling within the last two years. It is expected that Fire/EMS calls will increase with this population growth.

21.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 21-3.

An assessment of fiscal capabilities is presented in Table 21-4.

An assessment of administrative and technical capabilities is presented in Table 21-5.

An assessment of education and outreach capabilities is presented in Table 21-6.

Classifications under various community mitigation programs are presented in Table 21-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 21-8.

Table 21-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (See County Comprehensive Plan)	2021	Fire District falls within the County
Emergency Plan (LC CEMP)	12/2023	Last adopted in 2016
Lewis County Fire Mobilization Plan		Currently being updated
Lewis County MCI Plan	2022	

Table 21-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 21-5. Administrative and Technical Capability.

Staff/Personnel Resource		Available?
Planners or engineers with knowledge of land development and land management practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Planners or engineers with an understanding of natural hazards		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Staff with training in benefit/cost analysis		Yes
If yes, Department/Position:	Lewis County Emergency Management	
Surveyors		Yes
If yes, Department/Position:	Lewis County Community Development and Public Work	
Personnel skilled or trained in GIS applications		Yes
If yes, Department/Position:	LIS Division of Public Works	
Scientist familiar with natural hazards in local area		No
If yes, Department/Position:		
Emergency manager		Yes
If yes, Department/Position:	Lewis County DEM	
Grant writers		No
If yes, Department/Position:	Lewis County Departments	

Table 21-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Website under construction, County has webpage	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* No social media	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Physical community outreach boards in Post Office, store/restaurants, word of mouth	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Warning Sirens, Lewis County Alerts, IPAWS	Yes

Table 21-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	Yes	144489915	N/A
Public Protection	Yes	6	2022
Storm Ready	No		
Firewise			Just now starting

Table 21-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	Low
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Low
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

21.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

21.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Comprehensive Emergency Management Plan (CEMP)** – The CEMP is an emergency management plan that all fire districts are a part of, specifically highlighted as lead or support

agencies in Emergency Support Function (ESF) 4 and ESF 8. Fire Districts are also named in other ESF's highlighting response capabilities.

21.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Washington State Department of Transportation Emergency Plans – Hwy 12 is a major thoroughfare that runs through Packwood. Being incorporated with WSDOT plans would help with the identification of evacuation plans, detour routes, and road closures associated with the potential hazards in the area.
- United States Forest Service – Packwood is surrounded by the USFS and is integrated closely with the community. If there was a need for evacuation, forest service closures, or incidents affecting the area, it would directly impact the community of Packwood. By integrating in these plans it will allow for better coordination to lessen the impact to the community.
- Lewis County Fire Mobilization Plan

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

21.6 Risk Assessment

21.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 21-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 21-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

21.6.2 Hazard Risk Ranking

Table 21-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 21-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	36	High
2	Wildfire	33	High
3	Severe Weather	30	High
4	Earthquake	18	Medium
5	Volcano	14	Low
6	Landslide	12	Low
7	Avalanche	10	Low
8	Dam Failure	0	Low

21.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

21.7 Status of Previous Plan Actions

Table 21-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 21-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Recruit and train members of the community to assist with health and fire safety issues in the community. *Comment:* Completed but would like to continue in future plans	X		X	FD10-9
Educate the community citizens on emergency preparedness. *Comment:* Ongoing			X	FD10-10
Establish relationship with NOAA radio to provide early warning systems for citizens in the Cowlitz drainage. *Comment:*	X			
Identify possible evacuation routes for Lahars. *Comment:*			X	FD10-11

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Assess buildings for structural integrity to withstand earthquakes and weight of volcanic ash on roofs.	X			
Comment:				

21.8 Hazard Mitigation Action Plan

Table 21-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 21-13 identifies the priority for each action.

Table 21-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD10-1 – Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Flooding, Volcano,						
New	1, 5	LC FD #10	LC CDC	High	General Funds, HMGP, BRIC	Long-Term
Action FD10-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing	1, 2, 3	LCFD #10	LC DEM	Low	Staff Time, General Funds	Short-term
Action FD10-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
New	6	LCFD #10	N/A	High	General Funds, HMGP, BRIC	Medium-Term
Action FD10-4—Increase response capabilities with the purchase of vehicles and equipment (i.e. boats, horse trailers, UTV, etc.)						
Hazards Mitigated: Dam Failure, Earthquake, Food, Severe Weather, Volcano, Wildfire						
New	6	LC FD #10	LC DEM	High	AFG, HMGP, BRIC, Other grants, General Funds	Long-Term
Action FD10-5—Educate the community about wildfire threat and provide resources to create defensible space around residents and businesses.						
Hazards Mitigated: Wildfire, volcano						
Existing	1, 3, 5	LCFD #10	LC DEM, DNR	Low	Staff Time, General Funds	Ongoing
Action FD10-6—Increase sheltering capabilities by purchasing sleeping bags, blankets, pillows, tents, etc.						
Hazards Mitigated: Dam Failure, Avalanche, Earthquake, Flood, Landslide Severe Weather, Volcano, Wildfire						
New	6	LCFD #10	LCPHSS	High	General Funds, Safety grants	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD10-7—Identify programs to support the purchase of personal generators for community members with medical needs.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New	6	LCFD #10	LC DEM	High	General Funds	Medium-Term
Action FD10-8—Install exhaust hose in fire station bays where engines pull in/out to keep down on fire engine exhaust which has health implications.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New	1, 5	LCFD #10	N/A	High	AFG, General Funds, HMGP, BRIC	Medium-Term
Action FD10-9: Recruit and train members of the community to assist with health and fire safety issues in the community.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	3	LCFD #10	LC DEM	Low	SAFER grant, Staff Time, General Funds	Short-Term
Action FD10-10: Educate the community citizens on emergency preparedness.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	3, 4	LCFD #10	LC DEM	Low	Staff Time, General Funds	Short-Term
Action FD10-11: Identify possible evacuation routes for Lahars.						
Hazards Mitigated: Avalanche, Landslide, Severe Weather, Volcano						
New	1, 3, 4	LC FD #10	LCSO, LC GIS, LC DEM	High	Staff Time, General Funds	Medium-Term
Action FD10-12— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 21-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	2	High	High	Yes	Yes	No	High	High
2	3	Low	Low	Yes	No	Yes	Medium	Low
3	1	High	High	Yes	Yes	No	High	High
4	1	High	High	Yes	Yes	No	Medium	Medium
5	3	High	Low	Yes	No	Yes	High	Low
6	1	Low	High	No	No	No	Low	Low
7	1	High	High	Yes	Yes	No	High	High
8	2	High	High	Yes	Yes	No	High	High

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
9	1	High	Low	Yes	No	Yes	High	Low
10	2	Medium	Low	Yes	No	Yes	High	Low
11	3	Medium	High	No	No	No	Low	Low
12	See priority table in Volume 1 Section 4.10							

a. See the introduction to this volume for explanation of priorities.

21.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

N/A

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

22.0 LEWIS COUNTY FIRE DISTRICT #14 (RANDLE)

22.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Jeff Jaques, Chief
PO Box 127
Randle, WA 98377
Telephone: 360-497-7745
e-mail Address: jjaques@randlefire.org

Alternate Point of Contact
Joni Mullins-Linder, Asst Chief
PO Box 127
Randle, WA 98377
Telephone: 360-497-7745
e-mail Address: jmullins@randlefire.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 22-1.

Table 22-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Jeff Jaques	Fire Chief
Joni Mullins-Linder	Assistant Chief

22.2 Jurisdiction Profile

22.2.1 Overview

Lewis County Fire District 14 is a special purpose fire district formed to provide fire protection to the citizens within the district. We also provide emergency medical services within the district.

The district was formed in 1963. This is a primarily volunteer organization with a paid Fire Chief and paid District Secretary. There is an elected three-member board of commissioners, a paid Fire Chief, a paid District Secretary and approximately 18 volunteers. We are funded by property taxes and ambulance transport fees. The governing body is the elected board of commissioners.

The Board of Fire Commissioners assumes responsibility for the adoption of this plan; the Fire Chief will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 8/9.

22.2.2 Service Area

The District service area covers 105 square miles, serving a population of 3,500.

22.2.3 Assets

Table 22-2 summarizes the assets of the District and their value.

Table 22-2. Fire District 14 Assets.

Asset		Value
Property		
16 acres of land		$240,000
Equipment		
1991 Ford F350		$1,000
1976 Pumper		$5,000
1989 Water Tender		$4,000
2003 Ambulance		$45,000
2004 Ambulance		$75,000
2005 Pumper		$75,000
2009 Water Tender		$55,000
2011 Wildland Engine		$4,500
2019 Ambulance		$190,000
2019 Chief's Vehicle		$4,500
1988 Pumper		$5,000
	Total:	**$470,000**
Critical Facilities		
Fire Station 1 (9978 US Hwy 12)		$1,200,000
Fire Station 1 Annex (9974 US Hwy 12)		$70,000
Fire Station 2 (2383 Cispus Road)		$100,000
	Total:	**$1,370,000**

22.3 Current Trends

The population in our service area has remained relatively flat over the last 20 plus years with a decrease in family wage jobs and an increase in median age. We do not foresee any significant changes in the near future.

22.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 22-3.

An assessment of fiscal capabilities is presented in Table 22-4.

An assessment of administrative and technical capabilities is presented in Table 22-5.

An assessment of education and outreach capabilities is presented in Table 22-6.

Classifications under various community mitigation programs are presented in Table 22-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 22-8.

Table 22-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan	2001	Lewis Co CEMP
Emergency Plan	2001	Lewis Count CEMP
Lewis County Fire Mobilization Plan	8/21/2023	2022
Lewis County MCI Plan	N/A	

Table 22-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 22-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
If yes, Department/Position:	
Engineers or professionals trained in building or infrastructure construction practices	No
If yes, Department/Position:	
Planners or engineers with an understanding of natural hazards	No
If yes, Department/Position:	
Staff with training in benefit/cost analysis	No
If yes, Department/Position:	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	No
If yes, Department/Position:	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	No

If yes, Department/Position:	
Grant writers	No
If yes, Department/Position:	

Table 22-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Social Media	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alert via DEM	Yes

Table 22-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	Yes	Business	N/A
Public Protection	Yes	8/9	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 22-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negatively impacted *Comment:*	Low
Public Capacity	
Local residents' knowledge of and understanding of climate risk *Comment:*	Low
Local residents' support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Low
Local economy's current capacity to adapt to climate impacts *Comment:*	Low
Local ecosystem's capacity to adapt to climate impacts *Comment:*	Medium

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

22.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

22.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County CEMP**—Comprehensive Emergency Management Plan

22.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **WA Dept of Transportation Emergency Plans**
- **WA Dept of Natural Resources Plans**
- **USFS Emergency Plans**
- **Response Plans**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

22.6 Risk Assessment

22.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 22-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 22-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$ NA
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$ NA
Flooding and Mudslides	4635	11/13-11/15/2021	$ NA
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$ NA
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$ NA
Biological, COVID-19	4481	1/20/2020-9/11/2023	$ NA
Biological, COVID-19	3427	1/20/2020-9/1/2023	$ NA
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$ NA
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$ NA

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$ NA
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$ NA
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	$ NA
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$ NA
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	$ NA
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$ NA
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$ NA
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$ NA
Earthquake	1361	2/28-3/16/2001	$ NA
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$ NA
Severe Storms, Flooding	1100	1/26-2/23/1996	$ NA
Storms, High Winds, Floods	1079	11/7-12/18/1995	$ NA
Severe Storm, High Winds	981	1/20-1/21/1993	$ NA
High Tides, Severe Storm	896	12/20-12/31/1990	$ NA
Flooding, Severe Storm	883	11/9-12/20/1990	$ NA
Flooding, Severe Storm	852	1/6-1/14/1990	$ NA
Severe Storms, Flooding	784	11/22-11/29/1986	$ NA
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$ NA
Severe Storms, Mudslides, Flooding	545	12/10/1977	$ NA
Severe Storms, Flooding	492	12/13/1975	$ NA
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$ NA
Severe Storms, Flooding	322	2/01/1972	$ NA
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$ NA
Heavy Rains and Flooding	185	12/29/1964	$ NA

22.6.2 Hazard Risk Ranking

Table 22-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 22-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	See note	High
2	Earthquake		Medium
3	Landslide		Medium
4	Severe Weather		Medium
5	Wildfire		Medium
6	Avalanche		Low
7	Dam Failure		Low
8	Volcano		Low

Note: Risk was determined using past occurrences, frequency, severity, and future predictions.

22.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

22.7 Status of Previous Plan Actions

Table 22-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 22-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Secure Building Contents	X			
Comment: Contents are secure, need moved if flooding is projected				
Replace Station 1 out of floodplain			X	1
Comment: Saving toward this				
Continue Response Training (Flood)	X			
Comment: This is ongoing for our personnel				
Compile and maintain a list of volunteers with ATVs/Snowmobiles	X			
Comment: We are a small department and know who has what				
Develop and maintain a snow plan	X			
Comment: Have a snowplow and ability to clear snow				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Maintain stock of extra filters	X			
Comment: Filters are stocked				
Maintain defensible space around FD facilities			X	4
Comment: Ongoing				
Maintain response readiness			X	5
Comment: Ongoing				
Continue response training (severe windstorm			X	5
Comment: Ongoing				

22.8 Hazard Mitigation Action Plan

Table 22-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 22-13 identifies the priority for each action.

Table 22-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LCFD14-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas, including the main fire station, Station 14-1 which is at risk of flooding.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	1,5	LCFD14		High	General Funds HMGP, BRIC, FMA	Long-term
Action LCFD14-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New and Existing	1,2,3	LC DEM	LCEM	Low	Staff Time, General Funds	Short-term
Action LCFD14-3—Purchase generators for critical facilities and infrastructure that lacks adequate backup power, including Station 14-2.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
Existing	6	LCFD14		Medium	General fund, HMGP, BRIC	Short-term
Action LCFD14-4— Maintain defensible space around FD facilities.						
Hazards Mitigated:	Wildfire					
Existing	1,6	LCFD14		Low	General Funds, CWDG	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action LCFD14-5—Conduct wildfire response and readiness training for all firefighters.						
Hazards Mitigated: Wildfire						
New and existing	3	LCFD14	LCEM	Low	General Funds	Short-term
Action LCFD14-6— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 22-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	2	High	High	Yes	Yes	No	High	High
2	3	High	Low	Yes	No	Yes	High	Low
3	1	Medium	Medium	Yes	Yes	Yes	High	Medium
4	2	High	Low	Yes	Yes	Yes	High	Medium
5	1	Medium	Low	Yes	Yes	Yes	Medium	Low
6	See priority table in Volume 1 Section 4.10							

a. See the introduction to this volume for explanation of priorities.

22.9 Information Sources Used for This Annex

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

23.0 LEWIS COUNTY FIRE DISTRICT #15 (WINLOCK)

23.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Richard Underdahl, Fire Chief
PO Box 708
609 NW Kerron Street
Winlock, WA 98596
Telephone: 360-785-4221
e-mail Address: Richard.underdahl@lewis15.org

Alternate Point of Contact
Amy Archer, District Secretary
PO Box 708
609 NW Kerron Street
Winlock, WA 98596
Telephone: 360-785-4221
e-mail Address: lewis15@compprime.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 23-1.

Table 23-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Richard Underdahl	Chief
Amy Archer	Secretary

23.2 Jurisdiction Profile

23.2.1 Overview

Winlock Fire & Rescue (Lewis County Fire District #15) is an all-hazard emergency response agency established in 1963 after the City of Winlock merged with the rural district. The district protects 42 square miles of property and citizens in and around the community of Winlock, Washington. The district responds to all natures of incidents ranging from medical calls to hazardous material releases. The district is a junior taxing district and receives levy funds from its general fund and EMS fund. The district also receives revenue from medical transport.

Lewis County Fire District #15 Fire Commissioners assumes responsibility for the adoption of this plan; Lewis County Fire District #15 will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of #6 in the City Limits of Winlock, #6 in the county area within 1000' of a hydrant and #6 in the county area that is serviced by a tender.

23.2.2 Service Area

The District service area covers 42 square miles, serving a population of 5,200.

23.2.3 Assets

Table 23-2 summarizes the assets of the District and their value.

Table 23-2. Fire District 15 Assets.

Asset		Value
Property		
5 acres of land		$110,000
Equipment		
1 Fire Engine, 2 Pumper/Tenders, 1 Brush Truck, 3 Ambulances, 1 Support Truck, 1 Command Truck, 1 Ladder Truck, hoses and misc equipment (609 NW Kerron Street, Winlock, WA)		$3,785,000
1 Pumper/Tender, 1 Antique Engine, hoses and misc equipment (241 N. Military Rd, Winlock, WA)		$450,000
Hoses and misc equipment (539 Nelson RD, Winlock, WA)		$25,000
	Total:	**$4,260,000**
Critical Facilities		
LCFD 15 Station 15-1 (609 NW Kerron Street)		$1,084,825
LCFD 15 Station 15-2 (241 N. Military Road)		$87,519
LCFD 15 Station 15-3 (539 Nelson Road)		$109,757
	Total:	**$1,282,101**

23.3 Current Trends

The district is seeing unprecedented growth in both industrial and housing markets. The need for more personnel and updating of apparatus and equipment is needed to provide adequate service to those in need of emergency service.

23.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 23-3.

An assessment of fiscal capabilities is presented in Table 23-4.

An assessment of administrative and technical capabilities is presented in Table 23-5.

An assessment of education and outreach capabilities is presented in Table 23-6.

Classifications under various community mitigation programs are presented in Table 23-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 23-8.

Table 23-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire district falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 23-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 23-5. Administrative and Technical Capability.

Staff/Personnel Resource		Available?
Planners or engineers with knowledge of land development and land management practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Planners or engineers with an understanding of natural hazards		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Staff with training in benefit/cost analysis		Yes
If yes, Department/Position:	Lewis County Emergency Management	
Surveyors		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Personnel skilled or trained in GIS applications		Yes
If yes, Department/Position:	GIS Division of Public Works	
Scientist familiar with natural hazards in local area		No
If yes, Department/Position:		
Emergency manager		Yes
If yes, Department/Position:	Lewis County Emergency Management	
Grant writers		Yes
If yes, Department/Position:	Lewis County Departments	

Table 23-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Public Education programs utilize social media/internet, internal newsletter, Lewis County Alerts	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alerts	Yes

Table 23-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	Yes	188546308	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	Yes		2023
Storm Ready	Yes		2023
Firewise	No	N/A	N/A

Table 23-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Medium
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Medium
Participation in regional groups addressing climate risks *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	N/A
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Medium
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Medium
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

23.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

23.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County Fire District #15 Standard Operating Guidelines:** Provides direction and instructions on how to perform a specific task or operation for firefighting activities.
- **Lewis County Fire District #15 Policy Manual**: Provide guidance when dealing with fire department-specific issues and situations, and to help ensure department activities are consistent, effective, efficient, and safe.
- **Lewis County Comprehensive Emergency Management Plan**: Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

23.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Fire Response Plans
- Post-disaster plans
- Evacuation route planning

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

23.6 Risk Assessment

23.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 23-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 23-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
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Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

23.6.2 Hazard Risk Ranking

Table 23-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 23-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Severe Weather	31	High
2	Wildfire	31	High
3	Flood	31	High
4	Earthquake	31	High
5	Dam Failure	20	Medium
6	Landslide	0	Low
7	Volcano	0	Low
8	Avalanche	0	Low

23.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Railroad impingement to response efforts due to location of the station and district response areas.

23.7 Status of Previous Plan Actions

Table 23-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 23-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Assess all buildings/structures for seismic/ash/snow load capabilities.			X	3
Comment:				
Conduct detailed study of vulnerability – ALL STATIONS			X	3
Comment:				
Develop a plan for temporary communications – ALL STATIONS	X			
Comment: Alternate communication methods, with backup power, were added to the main station.				
Develop a plan for post-disaster resource protection – ALL STATIONS			X	3
Comment:				
Develop a plan for alternative services – ALL STATIONS		X		
Comment: No longer necessary				
Conduct a study of potential impact – ALL STATIONS			X	3
Comment:				
Mitigate risks as indicated by vulnerability assessment			X	3
Comment:				

23.8 Hazard Mitigation Action Plan

Table 23-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 23-13 identifies the priority for each action.

Table 23-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD15-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Severe Weather, Wildfire, Flood, Earthquake, Dam Failure						
Existing	1, 5, 6	LCFD #15	City of Winlock/Lewis County CD	High	HMGP, BRIC, FMA	Medium-termf
Action FD15-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Severe Weather, Wildfire, Flood, Earthquake, Dam Failure, Landslide, Volcano, Avalanche						
Existing	2, 3	LDFD #15	LCDEM	Low	Staff Time, General Funds	Short-term
Action FD15-3—Assess and study vulnerabilities and impacts to Fire District stations, identify and implement mitigation projects to repair, retrofit, or relocate station.						
Hazards Mitigated: Severe Weather, Wildfire, Flood, Earthquake, Dam Failure, Landslide, Volcano, Avalanche						
New	1, 2, 3, 5, 6	LCFD #15	N/A	Medium	General Funds, HMGP, BRIC, FMA	Medium-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD15-4—Develop a wildfire plan addressing evacuation routes, and defensible space using the Firewise framework.						
Hazards Mitigated: Wildfire						
New	1, 2, 3, 4	LCFD #15	LCDEM	Low	General funds, CWDG, HMGP, BRIC	Medium-term
Action FD15-5—Evaluate solutions to avoid impinged response capabilities due to the station location. Relocate station if necessary.						
Hazards Mitigated: Severe Weather, Wildfire, Flood, Earthquake, Dam Failure, Landslide, Volcano, Avalanche						
New	1, 2, 3, 4, 5	LCFD #15	LCDEM	Low	General funds, AFG, HMGP, BRIC	Long-term
Action FD15-6—Develop a wildfire plan addressing evacuation routes, and defensible space using the Firewise framework.						
Hazards Mitigated: Wildfire						
New and Existing	1,2,3,4,5	LCFD #15	LCDEM	High	General funds, BRIC, HMGP, CWDG	Medium-term
Action FD15-7— Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigated: Wildfire						
See individual actions in Volume 1 Section 14.9 for details on specific actions						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 23-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Low	Med
2	2	High	Low	Yes	No	Yes	High	Low
3	5	High	Med	Yes	Yes	Yes	Med	Med
4	4	High	Low	Yes	Yes	Yes	Med	Med
5	5	High	High	Yes	Yes	No	Med	Med
6	5	High	High	Yes	Yes	No	Med	Med
7	See priotity table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

23.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Lewis County Fire District #15 Standard Operating Guidelines:** Provides direction and instructions on how to perform a specific task or operation for firefighting activities.

- **Lewis County Fire District #15 Policy Manual:** Provide guidance when dealing with fire department specific issues and situation, and to help ensure department activities are consistent, effective, efficient, and safe.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

24.0 COWLITZ-LEWIS FIRE DISTRICT 20 (VADER)

24.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Richard Underdahl, Fire Chief
PO Box 194
801 "B" Street
Vader, WA 98593
Telephone: 360-269-0906
e-mail Address: cowlitzlewisfd20@centurylink.net

Alternate Point of Contact
Carmen Sundin, District Secretary
PO Box 194
801 "B" Street
Vader, WA 98593
Telephone: 360-295-0906
e-mail Address: cowlitzlewisfd20@centurylink.net

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 24-1.

Table 24-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Richard Underdahl	Chief
Carmen Sundin	Secretary

24.2 Jurisdiction Profile

24.2.1 Overview

Cowlitz-Lewis Fire District #20 is an all-hazard emergency response agency established in 2011 after the merger of Lewis County Fire District #7 in Vader and Cowlitz County Fire District #4 in Ryderwood. The district protects 11 square miles of property and citizens in and around the community of Vader and Ryderwood, Washington. The district responds to all natures of incidents ranging from medical calls to hazardous material releases. The district is a junior taxing district and collects funds from it General and EMS levies. The district also collects revenue from patient EMS transports where the is a bill for services.

The Cowlitz-Lewis FD #20 assumes responsibility for the adoption of this plan; Cowlitz-Lewis FD #20 will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 7.

24.2.2 Service Area

The District service area covers 11 square miles, serving a population of approximately 2,011.

24.2.3 Assets

Table 24-2 summarizes the assets of the District and their value.

Table 24-2. Cowlitz-Lewis Fire District 20 Assets.

Asset		Value
Property		
.63 acres of land		$318,600
Equipment		
1 Fire Engine, 1 Tanker, 1 Ambulance, 1 Command Vehicle, 1 brush truck, Hoses and equipment (801 "B" Street, Vader, WA)		900,000
1 Fire Engine, 1 brush truck, 1 water tender, 1 ambulance, 1 support vehicle, 1 antique engine, hoses and equipment (101 W. First, Ryderwood, WA)		900,000
	Total:	**$1,800,000**
Critical Facilities		
Station 7-1 (801 "B" Street, Vader, WA)		950,000
Station 7-2 (101 W. First Street, Ryderwood, WA)		1,000,000
	Total:	**$1,950,000**

24.3 Current Trends

The district is seeing unprecedented growth in both industrial and housing markets. The need for more personnel and updating of apparatus and equipment is needed to provide adequate service to those in need of emergency service.

24.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 24-3.
- An assessment of fiscal capabilities is presented in Table 24-4.
- An assessment of administrative and technical capabilities is presented in Table 24-5.
- An assessment of education and outreach capabilities is presented in Table 24-6.
- Classifications under various community mitigation programs are presented in Table 24-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 24-8.

Table 24-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Comprehensive Plan (see County Comprehensive Plan)	2021	Fire district falls within the County
Emergency Plan (See County CEMP)	12/2023	Last adopted 2016

Table 24-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 24-5. Administrative and Technical Capability.

Staff/Personnel Resource		Available?
Planners or engineers with knowledge of land development and land management practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Engineers or professionals trained in building or infrastructure construction practices		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Planners or engineers with an understanding of natural hazards		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Staff with training in benefit/cost analysis		Yes
If yes, Department/Position:	Lewis County Emergency Management	
Surveyors		Yes
If yes, Department/Position:	Lewis County Community Development and Public Works	
Personnel skilled or trained in GIS applications		Yes
If yes, Department/Position:	GIS Division of Public Works	
Scientist familiar with natural hazards in local area		No
If yes, Department/Position:	Enter Response	
Emergency manager		Yes
If yes, Department/Position:	Lewis County Emergency Management	
Grant writers		Yes
If yes, Department/Position:	Lewis County Departments	

Table 24-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Public Education programs utilize social media/internet, internal newsletter, Lewis County Alerts	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Lewis County Alerts	Yes

Table 24-7. Community Classifications.

	Participating?	Classification	Date Classified
DUNS #	Yes		N/A
Public Protection	Yes	7	2020/2024
Storm Ready	Yes		2023
Firewise	Yes		2008

Table 24-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Medium
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Medium
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	Low
Comment:	
Political support for implementing climate change adaptation strategies	N/A
Comment:	
Financial resources devoted to climate change adaptation	Low
Comment:	
Local authority over sectors likely to be negatively impacted	Medium
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment:	
Local residents' support of adaptation efforts	Low
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy's current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystem's capacity to adapt to climate impacts	Medium
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

24.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

24.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Lewis County Fire District #20 Standard Operating Guidelines**: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.

- **Lewis County Fire District #20 Policy Manual:** Provide guidance when dealing with fire department-specific issues and situations, and to help ensure department activities are consistent, effective, efficient, and safe.
- **Lewis County Comprehensive Emergency Management Plan:** Integrated into Emergency Support Function #4: Firefighting which guides the county's actions before, during, and after a disaster.

24.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Response plans**
- **Evacuation plans**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

24.6 Risk Assessment

24.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 24-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 24-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	N/A
Flooding and Mudslides	4635	11/13-11/15/2021	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	N/A
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	N/A
Earthquake	1361	2/28-3/16/2001	N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	N/A
Severe Storm, High Winds	981	1/20-1/21/1993	N/A
High Tides, Severe Storm	896	12/20-12/31/1990	N/A
Flooding, Severe Storm	883	11/9-12/20/1990	N/A
Flooding, Severe Storm	852	1/6-1/14/1990	N/A
Severe Storms, Flooding	784	11/22-11/29/1986	N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	N/A
Severe Storms, Flooding	492	12/13/1975	N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	N/A
Severe Storms, Flooding	322	2/01/1972	N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	N/A
Heavy Rains and Flooding	185	12/29/1964	N/A

24.6.2 Hazard Risk Ranking

Table 24-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 24-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Severe Weather	31	High
2	Wildfire	31	High
3	Flood	31	High
4	Dam Failure	31	High
5	Earthquake	20	Medium
6	Landslide	0	Low
7	Volcano	0	Low
8	Avalanche	0	Low

24.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Railroad impingement to response efforts due to location of the station and district response areas.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

24.7 Status of Previous Plan Actions

Table 24-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 24-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Station 7-1: Secure tipping hazards		X		
Comment: Tippable items are secured				
Station 7-1: Maintain generators	X			
Comment: Portable generator in service.				
FS7-1,7-2: Secure building contents	X			
Comment: New locks installed.				
FS7-1,7-2: Continue response training	X			
Comment: Ongoing training				
FS7-1, 7-2: Develop a list of volunteers with ATVs/ snowmobiles	X			
Comment: Current list.				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
FS7-1,7-2: Maintain extra filters for emergency vehicles *Comment:* Currently in inventory.	X			
FS7-1, 7-2: Maintain supply of N95 masks *Comment:* Several on hand.	X			
FS7-1, 7-2: Maintain response readiness *Comment:* Ongoing	X			

24.8 Hazard Mitigation Action Plan

Table 24-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 24-13 identifies the priority for each action.

Table 24-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD20-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Severe Weather, Wildfire, Flood, Earthquake, Dam Failure					
New and Existing	1, 5, 6	LCFD #20	Lewis County CD	High	HMGP, BRIC, FMA	Long-term
Action FD20-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Severe Weather, Wildfire, Flood, Earthquake, Dam Failure, Landslide, Volcano, Avalanche					
New and Existing	2, 3	LCFD #20	LCDEM	Low	Staff Time, General Funds	Short-term
Action FD20-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New and Existing	1, 6	LCFD #20	N/A	High	General funds, HMGP, BRIC	Medium-term
Action FD20-4—Purchase pumper/tender for warning and response capabilities.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New	3, 4	LCFD #20	N/A	High	General funds, AFG, HMGP, BRIC	Long
Action FD20-5—Purchase pumper/tender at main station to increase available “on-hand” water supply during a disaster.						
Hazards Mitigated:	Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire					
New	6	LCFD #20	N/A	High	General funds, AFG, HMGP, BRIC	Long

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action FD20-6—Implement the wildfire actions listed in Volume 1 Table 14-3.						
Hazards Mitigation : Wildfire						
See individual actions in Volume 1 Section 14.9 for specific details						

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 24-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	3	High	High	Yes	Yes	No	Low	Low
2	2	Low	Low	Yes	No	Yes	Low	Low
3	2	High	High	Yes	Yes	No	High	High
4	2	High	High	Yes	Yes	No	High	High
5	1	High	High	Yes	Yes	No	High	High
6	See priority table in Volume 1 Section 14.10							

a. See the introduction to this volume for explanation of priorities.

24.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- Lewis County Fire District #20 Standard Operating Guidelines: Provides direction and instructions on how to perform a specific task or operation for firefighting activities.
- Lewis County Fire District #20 Policy Manual: Provide guidance when dealing with fire department specific issues and situation, and to help ensure department activities are consistent, effective, efficient, and safe.

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

25.0 LEWIS COUNTY CEMETERY DISTRICT #4

25.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Peggy Hirte-Uhlorn, Lead Commissioner
PO Box 101
Glenoma, WA 98336
Telephone: 360-520-7552
e-mail address: peghirte@gmail.com

Alternate Point of Contact
Martha Garoutte, Secretary
103 Sunstone Rd
Packwood, WA 98361
Telephone: 360-496-1519
e-mail Address: garouttemartha@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 25-1.

Table 25-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Peggy Hirte-Uhlorn	Lead Commissioner
Heather McKenzie	Commissioner
Martha Garoutte	Secretary

25.2 Jurisdiction Profile

25.2.1 Overview

The Lewis County Cemetery District #4 is a special purpose district created in 1959, by combining 3 individual cemeteries. Those cemeteries are located in Packwood, Randle and Glenoma. A three-member elected Board of Commissioners governs the District. The Commissioners assume responsibility for the adoption of this plan. The Commissioners will oversee its implementation. The District currently employs a secretary and a maintenance person. Funding comes primarily through property taxes and the sale of burial sites.

25.2.2 Service Area

The District serves the residents of the eastern portion of Lewis County, with a population of 4,050. The district's service area covers 710.48 square miles, from Fern Gap to the summit of White Pass.

25.2.3 Assets

Table 25-2 summarizes the assets of the District and their value.

Table 25-2. Cemetery District 4 Assets.

Asset	Value
Property	
20.94 acres of land	$401,000
Equipment	
Well Head 1 and 2 (Evergreen Cemetery)	$55,000
Grave Sites & 400+ stones (Evergreen Cemetery)	$6,000 to 18,000 per stone
Underground Sprinkler System (Evergreen Cemetery)	$12,500
Underground Electrical (Evergreen Cemetery)	$7,500
Well Head (Rainey Valley Cemetery, Glenoma)	$27,500
Grave Sites& 400+ stones (Rainey Valley Cemetery, Glenoma)	$6,000 to 18,000 per stone
Underground Sprinkler System (Rainey Valley Cemetery, Glenoma)	$15,000
Electrical System(Rainey Valley Cemetery, Glenoma)	$7,500
Well Head (Silvercreek Cemetery, Randle)	$27,500
Grave Sites and 700+ stones (Silvercreek Cemetery, Randle)	$6,000 to 18,000 per stone
Underground Sprinkler System (Silvercreek Cemetery, Randle)	$15,000
Electrical System (Silvercreek Cemetery, Randle)	$7,500
Equipment Shed (Silvercreek Cemetery, Randle)	$6,250
Shop Building (Shop Complex, Randle)	$150,000
Well Head (Shop Complex, Randle)	$27,500
Electrical System (Shop Complex, Randle)	$7,500
John Deere 2320 4-Wheel Drive Tractor	$3,000
Flatbed Trailer	$1,000
2004 Utility Truck	$15,000
2020 Dump trailer	$5,000
John Deere Zero Turn Mower	$10,000
John Deere 2320 Mower	$5.000
John Deere 345 Mower	$5,000
Total:	**$ 428,250.00**
Critical Facilities	
Well House 1 and 2 301 Cannon Road, Packwood, WA	$55,000
Road System 301 Cannon Road, Packwood, WA	$3,000
Well House 101 Scott Road, US Hwy 12, Glenoma, WA	$22,000
Road System 101 Scott Road, US Hwy 12, Glenoma, WA	$3,000
Well House 687 Silverbrook Road, Randle, WA	$22,000
Road System 687 Silverbrook Road, Randle, WA	$3,000
Shop Building 542 Silverbrook Road Randle WA (Shop Complex)	$150,000
Well Head 542 Silverbrook Road Randle WA (Shop Complex)	$27,500
Total:	**$ 285,500.00**

25.3 Current Trends

Service trends are staying steady. It is anticipated that we will need to develop a new cemetery on land that the district owns at 542 Silverbrook Rd, Randle WA, as the Silverbrook Cemetery at 687 Silverbrook Road, Randle, WA is nearly full.

25.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 25-3.

An assessment of fiscal capabilities is presented in Table 25-4.

An assessment of administrative and technical capabilities is presented in Table 25-5.

An assessment of education and outreach capabilities is presented in Table 25-6.

Classifications under various community mitigation programs are presented in Table 25-7.

The community's adaptive capacity for the impacts of climate change is presented in Table 25-8.

Table 25-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
No Plans		

Table 25-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Unknown
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas, or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Unknown
Development Impact Fees for Homebuyers or Developers	No

Table 25-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If yes, Department/Position:*	No
Engineers or professionals trained in building or infrastructure construction practices ***If yes, Department/Position:***	No
Planners or engineers with an understanding of natural hazards *If yes, Department/Position:*	No
Staff with training in benefit/cost analysis *If yes, Department/Position:*	No
Surveyors *If yes, Department/Position:*	No
Personnel skilled or trained in GIS applications *If yes, Department/Position:*	No
Scientist familiar with natural hazards in local area *If yes, Department/Position:*	No
Emergency manager *If yes, Department/Position:*	No
Grant writers *If yes, Department/Position:*	No

Table 25-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, briefly describe:*	No
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 25-7. Community Classifications.

	Participating?	Classification	Date Classified
DUNS #	Unknown		
Public Protection	No		
Storm Ready	No		
Firewise	No		

Table 25-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Unsure
Comment:	
Jurisdiction-level monitoring of climate change impacts	Unsure
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	Unsure
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Unsure
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Unsure
Comment:	
Participation in regional groups addressing climate risks	Unsure
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Unsure
Comment:	
Identified strategies for greenhouse gas mitigation efforts	Unsure
Comment:	
Identified strategies for adaptation to impacts	Unsure
Comment:	
Champions for climate action in local government departments	Unsure
Comment:	
Political support for implementing climate change adaptation strategies	Unsure
Comment:	
Financial resources devoted to climate change adaptation	Unsure
Comment:	
Local authority over sectors likely to be negatively impacted	Unsure
Comment:	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Unsure
Comment:	
Local residents' support of adaptation efforts	Unsure
Comment:	
Local residents' capacity to adapt to climate impacts	Unsure
Comment:	
Local economy's current capacity to adapt to climate impacts	Unsure
Comment:	

Criterion	Jurisdiction Rating[a]
Local ecosystem's capacity to adapt to climate impacts	Unsure
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

25.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

25.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- No integration has occurred.

25.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **County comprehensive plan, populations growth estimates.**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

25.6 Risk Assessment

25.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 25-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 25-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682	11/3-11/8/2022	$N/A
Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	$N/A
Flooding and Mudslides	4635	11/13-11/15/2021	$N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	$ N/A
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	$ N/A
Biological, COVID-19	4481	1/20/2020-9/11/2023	$ N/A
Biological, COVID-19	3427	1/20/2020-9/1/2023	$ N/A
Severe Winter Storms, Flooding, Landslides, and Mudslides	4309	1/30-2/22/2017	$ N/A
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	$ N/A
Severe Storms, Straight-line Winds, Flooding, Landslides, Mudslides	4249	11/12-11/21/2015	$ N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	$ N/A
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	$ N/A
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	$ N/A
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	Mudslide covered ½ of the Rainey Valley Cemetery with 4 to 6 inches of mud.
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	$ N/A
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	$ N/A
Severe Storms, Flooding, Landslides, Mudslides	1671	11/2-11/11/2006	$ N/A
Earthquake	1361	2/28-3/16/2001	$ N/A
Severe Winter Storms, Flooding	1159	12/26/1996-2/10/1997	$ N/A
Severe Storms, Flooding	1100	1/26-2/23/1996	$ N/A
Storms, High Winds, Floods	1079	11/7-12/18/1995	$ N/A
Severe Storm, High Winds	981	1/20-1/21/1993	$ N/A
High Tides, Severe Storm	896	12/20-12/31/1990	$ N/A
Flooding, Severe Storm	883	11/9-12/20/1990	$ N/A

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
Flooding, Severe Storm	852	1/6-1/14/1990	$ N/A
Severe Storms, Flooding	784	11/22-11/29/1986	$ N/A
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	$ N/A
Severe Storms, Mudslides, Flooding	545	12/10/1977	$ N/A
Severe Storms, Flooding	492	12/13/1975	$ N/A
Severe Storms, Snowmelt, Flooding	414	1/25/1974	$ N/A
Severe Storms, Flooding	322	2/01/1972	$ N/A
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	$ N/A
Heavy Rains and Flooding	185	12/29/1964	$ N/A

25.6.2 Hazard Risk Ranking

Table 25-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and district operations. Mitigation actions target hazards with high and medium rankings.

Table 25-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Landslide	See note	High
2	Severe Weather		High
3	Wildfire		Medium
4	Earthquake		Medium
5	Flood		Low
6	Volcano		Low
7	Avalanche		Low
8	Dam Failure		Low

Note: Risk was determined using past occurrences, frequency, severity, and future predictions.

25.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None

25.7 Status of Previous Plan Actions

Table 25-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 25-11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Well Houses: Assess buildings for structural integrity to determine strength in withstanding an earthquake *Comment:*			X	CD4-4
Grave Sites: Assess grave site to determine the effects of natural hazards. *Comment:*			X	CD4-5
Underground Sprinkler System: Assess the sprinkler system to determine the effects of natural hazards. *Comment:*			X	CD4-6

25.8 Hazard Mitigation Action Plan

Table 25-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 25-13 identifies the priority for each action. Table 25-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 25-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CD4-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	1,5	CD 4		High	HMGP, BRIC, FMA	Long-Term
Action CD4-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
New and Existing	1,2,3,4	CD 4		Low	Staff Time, General Funds	Short-Term
Action CD4-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power.						
Hazards Mitigated: Avalanche, dam failure, earthquake, flooding, landslide, severe weather, volcano, wildfire						
Existing	1,6	CD 4		Medium	General Funds, HMGP, BRIC, FMA	Long-Term
Action CD4-4— Assess buildings for structural integrity to determine strength in withstanding an earthquake						
Hazards Mitigated: Earthquake						
Existing	1	CD 4		Low	Staff Time, General Funds	Medium-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CD4-5— Assess grave site to determine the effects of natural hazards.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	1	CD 4		Low	Staff Time, General Funds	Medium-Term
Action CD4-6— Assess the sprinkler system to determine the effects of natural hazards.						
Hazards Mitigated: Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire						
Existing	1	CD 4		Low	Staff Time, General Funds	Medium-Term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 25-13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	2	High	High	Yes	Yes	No	High	High
2	4	High	Low	Yes	No	Yes	High	Low
3	2	High	Medium	Yes	Yes	No	Medium	Medium
4	1	Medium	Low	Yes	No	Yes	Medium	Low
5	1	Medium	Low	Yes	No	Yes	Medium	Low
6	1	Medium	Low	Yes	No	Yes	Medium	Low

a. See the introduction to this volume for explanation of priorities.

Table 25-14. Analysis of Mitigation Actions.

	Action Addressing Hazard, by Mitigation Type[a]							
Hazard Type	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Landslide		CD4-1,5,6			CD4-3			CD4-2
Severe Weather		CD4-1,5,6			CD4-3			CD4-2
Medium-Risk Hazards								
Wildfire		CD4-1,5,6			CD4-3			CD4-2
Earthquake		CD4-1, 4,5,6			CD4-3			CD4-2
Low-Risk Hazards								
Flood		CD4-1,5,6			CD4-3			CD4-2
Volcano		CD4-1,5,6			CD4-3			CD4-2
Avalanche		CD4-1,5,6			CD4-3			CD4-2
Dam Failure		CD4-1,5,6			CD4-3			CD4-2

a. See the introduction to this volume for explanation of mitigation types.

25.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

None

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

25.10 Additional Comments

- The Cemetery District has 4 wells, the water of which is used for irrigation and has not been tested. In an emergency, this water could be used for watering stock, and various other uses for non-potable water. The water could be tested for human consumption.
- The cemetery in Glenoma and the Shop property in Randle could be used for parking of stock trailers, campers, RV and storing items, or as a staging area. The Shop in Randle could be used to house cats and dogs in crates.
- At this time two of our commissioners and the maintenance person have experience towing trailers. Our current secretary is Red Cross Disaster Certified and a member of Search and Rescue.

26.0 PROVIDENCE HOSPITAL

26.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Scott Smitherman, Emergency Preparedness Manager
1010 S. Scheuber Rd. #213
Centralia,WA 98531
Telephone: 360-827-8840
e-mail Address: Scott.Smitherman@providence.org

Alternate Point of Contact
Richard Freed
1010 S. Scheuber Rd. #213
Centralia,WA 98531
Telephone: 360-827-8840
e-mail Address: Richard.Freed@providence.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 26-1.

Table 26-1. Local Hazard Mitigation Planning Team Members.

Name	Title
Scott Smitherman	Manager, Providence-Swedish SPS Emergency Prep.
Richard Freed	Coordinator, Providence-Swedish SPS Emergency Prep.

26.2 Jurisdiction Profile

26.2.1 Overview

Established in 1988, Providence Centralia Hospital is a 128-bed, not-for-profit hospital and 5 associated licensed clinics, providing emergency, diagnostic, cancer, birthing, and surgical services. Providence Centralia has over 1,200 employees within the hospital and over 6,000 in the greater service area. Overseeing the hospital is the Southwest Washington Community Mission Board.

26.2.2 Service Area

The hospital service area covers 2,436 square miles serving a population of approximately 85,370.

26.2.3 Assets

Table 26-2 summarizes the assets of the hospitalt and their value.

Table 26-2. Hospital Assets.

Asset	Value
Critical Facilities	
Providence Centralia Hospital (914 S. Scheuber Road)	$88,497,034
General Surgery Building (1720 Cooks Hill Road)	$2,269,949
Lewis County Cancer Center (2015 Cooks Hill Road	$2,220,173
Centralia Women's Service (1000 Scheuber Road)	$1,044,000
Professional Center (1010 S. Scheuber Road)	$5,985,313
Providence Blanchet House (1700 Providence Lane)	$2,001,529

Providence Imaging Center (908 S. Scheuber Road)	$331,117
Providence Medical Plaza (1800 Cooks Hill Road)	$4,707,410
Providence Physical Therapy (1900 Cooks Hill Road)	$363,229
Providence Rossi House (1720 Providence Lane)	$1,219,322
PMG South Physician Chehalis (931 Market Blvd)	$797,805
Providence Sound Home (1339 NW Louisiana Avenue)	$199,920
Providence Thorebeckes (91 SW Chehalis Ave)	$399,840
St. Lukes Association Providence House (350 Washington Street)	$3,427,906
Providence Aquatic Center (1809 Cooks Hill Road)	$564,524
Total:	**$114,029,071**

26.3 Current Trends

There continues to be a slow but steady increase in COVID activity in Lewis County and across the State with hospitals reporting increased cases and several reporting impacts on staffing for the first time in several months. The numbers are still quite low compared to earlier surges, but we are monitoring this very closely. Bed occupancy is a challenge for most hospital systems across the State, with ICU beds seeing the most strain. Hospitals are starting to see impacts due to rising COVID inpatients and some spread among staff compounding staffing challenges. Long term care facilities are reporting COVID outbreaks in several facilities.

Air quality remains an issue for many areas of Washington due to fires burning throughout Western Canada and now impacting our State directly. All sectors of healthcare continue to struggle with staffing levels and delays in patient care/discharge due to compounding factors. Summer months typically bring increased trauma cases, heat related illnesses, wildfire risks and numerous large events.

26.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

An assessment of planning and regulatory capabilities is presented in Table 26-3.

An assessment of fiscal capabilities is presented in Table 26-4.

An assessment of administrative and technical capabilities is presented in Table 26-5.

An assessment of education and outreach capabilities is presented in Table 26-6.

Classifications under various community mitigation programs are presented in Table 26-7.

The community’s adaptive capacity for the impacts of climate change is presented in

Table 26-8.

Table 26-3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Water System	June 2012	Adopted January 2010
Sanitary Sewer System	January 2006	Adopted January 2002
Comprehensive Plan	January 2023	Adopted January 2002
Capital Facilities Plan	July 2010	
Emergency Operations Plan	May 2023	Adopted February 2010
Utility Plan	February 2012	Adopted March 2010

Table 26-4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas, or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 26-5. Administrative and Technical Capability.

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes
If yes, Department/Position: Providence-Swedish South Puget Sound Contract Mgmt/Facility Mgmt.	
Engineers or professionals trained in building or infrastructure construction practices	Yes
If yes, Department/Position: Providence-Swedish South Puget Sound Contract Mgmt/Facility Mgmt.	
Planners or engineers with an understanding of natural hazards	Yes
If yes, Department/Position: Providence-Swedish South Puget Sound Contract Mgmt/Facility Mgmt.	
Staff with training in benefit/cost analysis	Yes
If yes, Department/Position: Providence-Swedish South Puget Sound Financial Mgmt.	
Surveyors	No
If yes, Department/Position:	
Personnel skilled or trained in GIS applications	No
If yes, Department/Position:	
Scientist familiar with natural hazards in local area	No
If yes, Department/Position:	
Emergency manager	Yes
If yes, Department/Position: Providence-Swedish South Puget Sound Emergency Preparedness	
Grant writers	No

Table 26-6. Education and Outreach Capability.

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe:* Only available to Prov-Swed	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:*	No
Do you have any other programs in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Internal Communications	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Comprehensive Emergency Management Plan	Yes

Table 26-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 26-8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	High
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	High
Capital planning and land use decisions informed by potential climate impacts *Comment:*	High
Participation in regional groups addressing climate risks *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:* Facility Management action plans	High
Identified strategies for adaptation to impacts *Comment:* Facility Management action plans	High
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negatively impacted *Comment:*	Low
Public Capacity	
Local residents' knowledge of and understanding of climate risk *Comment:* Not measured by this organization	Unknow
Local residents' support of adaptation efforts *Comment:* Not measured by this organization	Unknown
Local residents' capacity to adapt to climate impacts *Comment:* Not measured by this organization	Unknown
Local economy's current capacity to adapt to climate impacts *Comment:* Not measured by this organization	Unknown
Local ecosystem's capacity to adapt to climate impacts *Comment:* Not measured by this organization	Unknown

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

26.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

26.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Providence-Swedish South Puget Sound Emergency Operations Plan for preparedness, response, mitigation, and recovery.**

26.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **This plan will be continue to be integrated with the Providence-Swedish SWSA Emergency Operations plan for preparedness, response, mitigation, and recovery.**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

26.6 Risk Assessment

26.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 26-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 26-9. Past Natural Hazard Events.

Type of Event	FEMA, State, or Local Disaster # or Declaration	Date	Damage Assessment
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Severe Winter Storms, Snowstorms, Straight-line Winds, Flooding	4650	12/26/2021-1/15/2022	no damage
Flooding and Mudslides	4635	11/13-11/15/2021	no damage
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4593	12/29/2020-1/16/2021	no damage
Severe Storms, Flooding, Landslides, and Mudslides	4539	1/20-2/10/2020	no damage
Biological, COVID-19	4481	1/20/2020-9/11/2023	no damage
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Severe Winter Storm, Straight-line Winds, Flooding, Landslides, Mudslides, Tornado	4235	12/1-12/15/2015	no damage
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Severe Winter Storm, Flooding, Landslides, and Mudslides	4056	1/14-1/23/2012	no damage
Severe Winter Storm, Flooding, Landslides, and Mudslides	1963	1/11-1/21/2011	no damage
Severe Winter Storm and Record and Near Record Snow	1825	12/12/2008-1/05/2009	no damage
Severe Winter Storm, Landslides, Mudslides, and Flooding	1817	1/06-1/16/2009	no damage
Severe Storms, Flooding, Landslides, Mudslides	1734	12/1-12/17/2007	no damage
Severe Winter Storm, Landslides, Mudslides	1682	12/14-12/15/2006	no damage
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Severe Storms, Flooding	1100	1/26-2/23/1996	no damage
Storms, High Winds, Floods	1079	11/7-12/18/1995	no damage
Severe Storm, High Winds	981	1/20-1/21/1993	no damage
High Tides, Severe Storm	896	12/20-12/31/1990	no damage
Flooding, Severe Storm	883	11/9-12/20/1990	no damage
Flooding, Severe Storm	852	1/6-1/14/1990	no damage
Severe Storms, Flooding	784	11/22-11/29/1986	no damage
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	no damage
Severe Storms, Mudslides, Flooding	545	12/10/1977	no damage
Severe Storms, Flooding	492	12/13/1975	no damage
Severe Storms, Snowmelt, Flooding	414	1/25/1974	no damage
Severe Storms, Flooding	322	2/01/1972	no damage
Heavy Rains, Melting Snow, Flooding	300	2/09/1971	no damage
Heavy Rains and Flooding	185	12/29/1964	no damage

26.6.2 Hazard Risk Ranking

Table 26-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and hospital operations. Mitigation actions target hazards with high and medium rankings.

Table 26-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	See note	High
2	Earthquake		Medium
3	Severe Weather		Medium
4	Wildfire		Medium
5	Landslide		Low
6	Dam Failure		Low
7	Volcano		Low
8	Avalanche		Low

Note: Risk was determined using past occurrences, frequency, severity, and future predictions.

26.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- None.

26.7 Status of Previous Plan Actions

Error! Reference source not found. summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 26 11. Status of Previous Plan Actions.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Property/Structure Assessments *Comment:* None	X			
Communication Systems with community and regional partners *Comment:* On Going	X			
Updating Utility Systems *Comment:* On Going	X			
Develop disaster response plans with community partners *Comment:* On Going	X			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Complete elevation survey in cooperation with Army Corp of Eng. & community partners *Comment:* No longer necessary		X		
Assess recently acquired buildings for disaster readiness (CMC, Cancer Center) *Comment:* N/A	X			
Monitor and cutback or remove dead trees from property *Comment:* As needed	X			
Maintain and exercise redundant communication systems with community and regional partners *Comment:* On-going	X			
Weigh pros/cons of PCH becoming part of "Code Red" county alert system *Comment:* No longer necessary		X		
Implement seismic resiliency recommendations *Comment:* Complete	X			
Removed cement around water line into hospital *Comment:*	X			
Modified water lines hookups to allow tanker truck to hook into hospital water *Comment:*	X			
Develop exhaust system to outside air allowing current rehab area to be used as an isolation ward *Comment:*	X			
Develop isolation room into the renovation plans for the emergency department *Comment:*	X			
Work with city on redundant re-distribution of electricity *Comment:*	X			
Install new Ejector Pump for flooding *Comment:*	X			
Expansion of water and sewer capabilities to the hospital *Comment:* N/A	X			
Upgrade generator to meet seismic requirements *Comment:* No longer necessary		X		
Stockpile items needed for community care during long-term event *Comment:* As per Joint Commission requirements	X			
Attend Community partner meetings and exercises *Comment:*	X			
Contract with a structural engineer to be a first responder to the hospital *Comment:*	X			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Contract with hazmat company to respond to hazmat event *Comment:*	X			
Maintain contract for snow and ice removal *Comment:*	X			
Install new Ejector Pump for basement *Comment:*	X			
Install repeater in ED for police radio *Comment:*	X			

26.8 Hazard Mitigation Action Plan

Table 26-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 26-12 identifies the priority for each action.

Table 26-11. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action PRO-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
Existing	1,5	Providence-Swedish South Puget Sound	Lewis County/Centralia DEM	High	HMGP, BRIC, FMA	Medium-term
Action PRO-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan, and incorporate mitigation planning into all hospital and local planning efforts.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
New and Existing	1,2,3	Providence-Swedish South Puget Sound	Lewis County/Centralia DEM	Low	Staff Time, General Funds	Medium-term
Action PRO-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power to ensure vulnerable populations continue to be served during and after incidents causing power outages.						
Hazards Mitigated:	Avalanche, Dam Failure, Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire					
Existing	1,6	Providence-Swedish South Puget Sound	Lewis County/Centralia DEM	Low	HMGP, BRIC, FMA, General Funds	Medium-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action PRO-4—Purchase decontamination equipment for ambulatory/non-ambulatory patients and PPE for caregiver support, to ensure vulnerable populations and other patients remain safe during an incident.						
Hazards Mitigated:	Hazardous material response					
New and existing	6	Providence-Swedish South Puget Sound	Washington State DEM	High	General Funds	Short-term

a. Short-term = Existing program that will continue or new program that will start within one year; Medium-term = Completion within 5 years; Long-term = Completion within 10 years. On-going = phased project that will have an extended timeframe. Acronyms used here are defined at the beginning of this volume.

Table 26-12. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	2	High	High	Yes	Yes	No	High	High
2	3	High	Low	Yes	No	Yes	High	Low
3	1	High	Medium	Yes	Yes	No	High	High
4	1	High	High	Yes	No	No	High	Low

a. See the introduction to this volume for explanation of priorities.

26.9 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

Providence-Swedish South Puget Sound Emergency Operations Plan

The following outside resources and references were reviewed:

Hazard Mitigation Plan Annex Development Toolkit—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

Appendix A
Planning Partnership Expectations

LEWIS COUNTY HAZARD MITIGATION PLAN UPDATE
PLANNING PARTNER EXPECTATIONS

Achieving DMA Compliance for all Planning Partners

- **Estimated level of effort**. It is estimated that the total time commitment to meet these "participation" requirements for a planning partner not participating on the Steering Committee would be approximately 40 hours over the eight month period.
- **Participate in the process.** This means to support the process to the best of your capabilities. This planning process will utilize a Steering Committee that will assume responsibility for many of the planning milestones prescribed for this process. The Steering Committee will be representative of the whole and will meet periodically throughout the process and provide direction and guidance to the planning team. Steering Committee meetings are not mandatory meetings for all planning partners. This means that if you are not on the Steering Committee, your attendance is not required. However, it is our hope that all planning partners will attempt to remain engaged with this process. This process is anticipated to take eight months to complete. It will be easy to become disconnected with the process objectives if you do not participate in some of these meetings to some degree. The planning team will also request support from the partnership during the public involvement phase of the planning process. Support could be in the form of providing venues for public meetings, attending these meetings as meeting participants, providing technical support, etc.
- **Consistency Review.** All planning partners will be asked to identify their capabilities during this process. This capability assessment will require a review of existing documents (plans, studies and ordinances) pertinent to each jurisdiction to identify policies or recommendations that are consistent with those in the "parent" plan or have policies and recommendations that complement the hazard mitigation initiatives selected (i.e.: comp plans, basin plans or hazard specific plans).
- **Cost.** This project is partially funded by a FEMA planning grant. The grant match will be met by tracking in-kind labor. Please provide your point of contact's fully loaded billing rate in the letter of intent so we can use the time they spend on this project towards the match. Please also note if your point of contact is a volunteer.
- **Plan must be adopted by resolution each jurisdiction.**

At the project kick-off meeting, we will review the planning partner roles in more detail. The kick-off meeting is expected to be in April of 2022.

If you have questions about the project, please contact Erika Katt at Lewis County Emergency Management. She can be reached at 360-740-1153 or Erika.katt@lewiscountywa.gov.

If you are ready to participate, please fill out a Letter of Intent to participate using our template on your agency's letterhead and email to Erika.

Benefits of Participating in the Planning Process

- **Situational Awareness**. Understand how your community is vulnerable to natural hazards.
- **Public Safety**. Identify mitigation projects and strategies that can reduce the impact of natural hazards and reduce the loss of life and property.
- **Recovery.** Minimize downtime, accelerate recovery, and reduce the cost of disaster response.
- **Grant Eligibility.** Be eligible to receive FEMA mitigation grant funding (BRIC / FMA / HMGP) to complete mitigation projects in your community.
- **Partnerships.** Collaborate with other agencies in Lewis County to build relationships, identify strategies to reduce risk county-wide, and increase your capabilities and capacities to respond and recover from natural disasters.

Letter of Intent Template

Lewis County Hazard Mitigation Planning Partnership
C/O Erika Katt
Lewis County Emergency Management

Date

Dear Lewis County Planning Partnership,

Please be advised that the _____(***insert City or district name***)_____ is committed to participating in the update to the Lewis County Hazard Mitigation Plan Update. As the Chief Administrative Official for this jurisdiction, I certify that I will commit all necessary resources in order to meet Planning Partnership expectations as outlined in the "Planning Partners expectations" document provided by the planning team, in order to obtain Disaster Mitigation Act (DMA) compliance for our jurisdiction.

Mr./Ms. ***___(insert name)***_____ will be our jurisdiction's point of contact for this process and they can be reached at _____***(insert address, phone number, and e-mail address)_____***.

We understand that this designated point of contact's time will be applied to the "in-kind" local match for the grant that is funding this project. To aid in the determination of this local match, we have determined that the fully loaded billing rate for our designated point of contact is $___***(insert fully loaded filling rate)***____.

Sincerely,

___(insert name)____

Appendix B
Procedures for Linking to the Hazard Mitigation Plan Update

PROCEDURES FOR LINKING TO THE HAZARD MITIGATION PLAN

Not all eligible local governments within Lewis County are included in the Lewis County Hazard Mitigation Plan Update. It is assumed that some or all of these non-participating local governments may choose to "link" to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act. In addition, some of the current partnership may not continue to meet eligibility requirements due to a lack of participation as prescribed by the plan. The following "linkage" procedures define the requirements established by the Plan's Steering Committee and all planning partners for dealing with an increase or decrease in the number of planning partners linked to this plan. It should be noted that a currently non-participating jurisdiction within the defined planning area is not obligated to link to this plan. These jurisdictions can chose to do their own "complete" plan that addresses all required elements of section 201.6 of 44CFR.

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligible linking jurisdictions are instructed to complete ***all*** of the following procedures:

- The eligible jurisdiction requests a "Linkage Package" by contacting Lewis County Community Development Department for the plan:

  The linkage package will include:
  - A copy of Volume 1 and 2 of the plan (electronic or paper format).
  - Planning partner's expectations package.
  - A sample "letter of intent" to link to the Hazard Mitigation Plan Update.
  - A Special Purpose District or City template and instructions.
  - Catalog of Hazard Mitigation Alternatives
  - A "request for technical assistance" form.
  - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a local hazard mitigation plan.
- The new jurisdiction will be required to review both volumes of the Hazard Mitigation Plan Update, which includes the following key components for the planning area:
  - The planning area risk assessment
  - Goals and objectives
  - Plan implementation and maintenance procedures
  - Comprehensive review of alternatives
  - County-wide initiatives.
- Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided. Technical assistance can be provided upon request by completing the request. This assistance may be provided by the point of contact at Lewis County Community Development or any other resource within the Planning Partnership such as a member of the Steering Committee or a currently participating City or Special Purposes District partner. The point of contact will determine who will provide the technical assistance and the possible level of assistance based on resources available at the time of the request.
- The new jurisdiction will be required to develop a public involvement strategy that ensures the public's ability to participate in the plan development process. At a minimum, the new

jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The Planning Partnership will have resources available to aid in the public involvement strategy. However, it will be the new jurisdiction's responsibility to implement and document this strategy for incorporation into its annex. It should be noted that the Jurisdictional Annex templates ***do not*** include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the planning area described in Volume 1 of the plan. Since new partners were not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume 1 of the plan.

- Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to Lewis County Community Development for a pre-adoption review to ensure conformance with the plan format.
- The following will be reviewed:
  - Documentation of Public Involvement strategy
  - Conformance of template entries with guidelines outlined in instructions
  - Chosen initiatives are consistent with goals, objectives and mitigation catalog of the Planning Area Hazard Mitigation Plan Update
  - A Designated point of contact
  - A ranking of risk specific to the jurisdiction.

The point of contact may utilize members of the Steering Committee or other resources to complete this review. All proposed linked annexes will be submitted to the Steering Committee for review and comment prior to submittal to Washington State Military Department, Emergency Management Division.

- Plans approved and accepted by the Steering Committee will be forwarded to Washington State Military Department, Emergency Management Division for review with a cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.
- Washington Military Department Emergency Management Division reviews plans for federal compliance. Non-Compliant plans are returned to the lead agency for correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.
- FEMA reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies new jurisdiction of results of review with copies to Washington State Military Department, Emergency Management Division and approved planning authority.
- New jurisdiction corrects plan shortfalls (if necessary) and resubmits to the State through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards

adoption resolution to FEMA with copies to Lewis County Community Development and the State.

- FEMA regional director notifies new jurisdiction governing authority of plan approval.

The new jurisdiction plan is then included with the regional plan with the commitment from the new jurisdiction to participate in the ongoing plan implementation and maintenance.

DECREASING THE PARTNERSHIP

The eligibility afforded under this process to the planning partnership can be rescinded in two ways. First, a participating planning partner can ask to be removed from the partnership. This may be done because the partner has decided to develop its own plan or has identified a different planning process for which it can gain eligibility. A partner that wishes to voluntarily leave the partnership shall inform Lewis County Community Development Department of this desire in writing. This notification can occur any time during the calendar year. A jurisdiction wishing to pursue this avenue is advised to make sure that it is eligible under the new planning effort, to avoid any period of being out of compliance with the Disaster Mitigation Act.

After receiving this notification, Lewis County Community Development Department shall notify the State and FEMA in writing that the partner in question is no longer covered by the Hazard Mitigation Plan Update, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the “Planning Partner Expectations” package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified under chapter 7 in Volume 1 of the plan. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by Lewis County Community Development Department. The determination of whether a partner is meeting its participation requirements will be based on the following parameters:

- Are progress reports being submitted annually by the specified time frames?
- Are partners notifying Lewis County Community Development Department of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?
- Are the partners continuing to be supportive as specified in the Planning Partners expectations package provided to them at the beginning of the process?

Participation in the plan does not end with plan approval. This partnership was formed on the premise that a group of planning partners would pool resources and work together to strive to reduce risk within the planning area. Failure to support this premise lessens the effectiveness of this effort. The following procedures will be followed to remove a partner due to the lack of participation:

- The point of contact at Lewis County Community Development Department will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: multiple failures to submit annual progress reports, failure

to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of five attempts.

- The Steering Committee will review information provided by point of contact, and determine action by a vote. The Steering Committee will invoke the voting process established in the ground rules established during the formation of this body.
- Once the Steering Committee has approved an action, the point of contact will notify the planning partner of the pending action in writing via certified mail. This notification will outline the grounds for the action, and ask the partner if it is their desire to remain as a partner. This notification shall also clearly identify the ramifications of removal from the partnership. The partner will be given 30 days to respond to the notification.
- Confirmation by the partner that they no longer wish to participate or failure to respond to the notification shall trigger the procedures for voluntary removal discussed above.
- Should the partner respond that they would like to continue participation in the partnership, they must clearly articulate an action plan to address the deficiencies identified by the point of contact. This action plan shall be reviewed by the Steering Committee to determine whether the actions are appropriate to rescind the action. Those partners that satisfy the Steering Committee's review will remain in the partnership, and no further action is required.
- Automatic removal from the partnership will be implemented for partners where these actions have to be initiated more than once in a 5 year planning cycle.

Appendix C
Municipal Annex
Instructions and Templates for Municipalities

Chapter Title

In the chapter title at the top of Page 1, type in the complete official name of your municipality (e.g., City of Pleasantville, West County). Do not change the chapter number. Revise only the jurisdiction name. If your jurisdiction's name has already been entered, verify that wording and spelling are correct; revise as needed.

1.1 Local Hazard Mitigation Planning Team

Points of Contact
Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Who Should Be on the Local Mitigation Planning Team

The Local Hazard Mitigation Planning Team is responsible for developing your jurisdiction's annex to the hazard mitigation plan. Team membership should represent agencies with authority to regulate development and enforce local ordinances or regulatory standards, such as building/fire code enforcement, emergency management, emergency services, floodplain management, parks and recreation, planning/ community development, public information, public works/ engineering, stormwater management, transportation, or infrastructure.

Participating Planning Team
Populate Table 1-1 with the names of staff from your jurisdiction who participated in preparing this annex or otherwise contributed to the planning process for this hazard mitigation plan.

1.2 Jurisdiction Profile

Provide information specific to your jurisdiction as indicated, in a style similar to the examples provided below. This should be information that will not be provided in the overall mitigation plan document.

Location and Features
Describe the community's location, size and prominent features, in a statement similar to the example below:

EXAMPLE: The City of Canola is in the northwest portion of Basin County, along the Columbia River in eastern Washington. It is almost 150 miles northeast of Mintville. The city's total area is 4.2 square miles, with boundaries generally extending north-south from State Route 1 to the Columbia River and east-west from River Road to East Avenue. The City of Potatoes is to the north, unincorporated county is to the west, the City of Barley is to the south, and the Columbia River is to the west.

Canola is home to the University of Sugarbeet, Frozen Veggies, Inc., and the western portion of Columbia National Wildlife Refuge. Significant geographic features include the Watery River, which flows southwest across the city, Lake Splash in the city's northwest corner, and the foothills of the Craggy Mountains on the east side.

History
Describe the community's history, focusing on economy and development, and note its year of incorporation, in a statement similar to the example below:

EXAMPLE: The City of Canola was incorporated in 1858. The area was settled during the wheat rush in the 1850s as a supply center for farmers. As the wheat rush died down, corn and potatoes became the area's major economic resources. By 1913, the Canola Teachers College, a predecessor to today's University of Sugarbeet, was founded. Recently, the presence of the university has come to shape Canola's population into a young and educated demographic. In 1981 the City developed the Canola Marsh and Wildlife Sanctuary, an environmentally friendly sewage treatment enhancement system.

With numerous annexations since its original incorporation, the city's area has almost doubled. Today it features a commercial core in the center of the city, with mostly residential areas to the north and south, the university to the west and the national park on the east.

Governing Body Format
Describe the community's key governance elements and staffing, in a statement similar to the example below:

EXAMPLE: The City of Canola is governed by a five-member city council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police, and the City Manager's Office. The City has 13 commissions and task forces, which report to the City Council. The City currently employs a total of 155 employees (full-time equivalent).

The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.

1.3 Current Trends

Population
Provide the most current population estimate for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state agency that develops population estimates). Describe the current estimate and recent population trends in a statement similar to the example below.

> **EXAMPLE:** According to Washington OFM, the population of Canola as of July 2020 was 17,280. Since 2010, the population has grown at an average annual rate of 1.2 percent, though that rate is declining, with an annual average of only 0.8 percent since 2015.

Development
In the highlighted text that says "Describe trends in general," provide a brief description of your jurisdiction's recent development trends in a statement similar to the example below:

> **EXAMPLE:** Anticipated future development for the City of Canola is low to moderate, consisting primarily of residential growth. Recent development has been mostly infill. There has been a focus on affordable housing and a push for more secondary mother-in-law units. Future growth in the City will be managed as identified in the City's 2018 Comprehensive Plan. City actions, such as those relating to land use, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with the plan.

Complete the table titled "Recent and Expected Future Development Trends." Note:

- The portion of the table requesting the number of permits by year is specifically looking for development permits for **new** construction. If your jurisdiction does not have the ability to differentiate between permit types, list the total number of permits and indicate "N/A" (not applicable) for the permit sub-types.
- If your jurisdiction does not have the ability to track permits by hazard area, delete the bullet list of hazard areas and insert a qualitative description of where development has occurred.

1.4 Capability Assessment

Note that it is unlikely that one person will be able to complete all sections of the capability assessment alone. The primary preparer will likely need to reach out to other departments within the local government for information.

Planning and Regulatory Capability
In the table titled "Planning and Regulatory Capability," indicate "Yes" or "No" for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter "Yes" if your jurisdiction has prepared or adopted the identified item; otherwise, enter "No." If yes, then enter the code, ordinance number, or plan name and its date of adoption in the comments column. **Note: If you enter yes, be sure to provide a comment with the appropriate code, ordinance or plan and date of adoption.**
- **Other Jurisdiction Authority**—Enter "Yes" if another agency (e.g., a state agency or special purpose district) enforces or administers the identified item in a way that may impact your jurisdiction or if any state or federal regulations or laws would prohibit local implementation of the identified item; otherwise, enter "No." **Note: If you enter yes, be sure to provide a comment indicating the other agency and its relevant authority.**
- **State Mandated**—Enter "Yes" if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter "No." **Note: If you enter yes, be sure to provide a comment describing the relevant state mandate.**
- **Integration Opportunity**—Enter "Yes" if there are obvious ways that the code, ordinance or plan can be coordinated with the hazard mitigation plan. Consider the following:
  - If you answered "Yes" in the Local Authority column for this item, then enter "Yes" for integration opportunity if any of the following are true:
    - ✓ The item already addresses hazards and their impacts and should be updated to reflect new information about risk from this hazard mitigation plan
    - ✓ The item does not address hazards and their impacts but is due for an update in the next 5 years and could be updated in a way that does address hazards and impacts
    - ✓ The item identifies projects for implementation and these could be reviewed to determine if they can be modified to help address hazard mitigation goals
    - ✓ The item identifies projects for implementation and some of these should be considered for inclusion in the hazard mitigation action plan for your jurisdiction
  - If you answered "No" in the Local Authority column for this item, then enter "Yes" for integration opportunity if your jurisdiction will develop the item over the next 5 years
    Note: Each capability with a "Yes" answer to Integration Opportunity will be discussed in more detail later in the annex. You may wish to keep notes when assessing the Integration Opportunity or review the "Integration with Other Planning Initiatives" section below.
- **Comments**—Enter the code number and adoption date for any local code indicated as being in place; provide other comments as appropriate to describe capabilities for each entry. **DO NOT OVERLOOK THIS STEP**

For the categories "Comprehensive Plan" and "Capital Facilities Plan," answer the specific questions shown, in addition to completing the four columns indicating level of capability.

Development and Permit Capability
Complete the table titled "Development and Permitting Capabilities."

Fiscal Capability
Complete the table titled "Fiscal Capability" by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter "Yes" if the resource is fully accessible to your jurisdiction. Enter "No" if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability
Complete the table titled "Administrative and Technical Capability" by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter "Yes" or "No" in the column labeled "Available?". If yes, then enter the department and position title. If you have contract support with these capabilities, you can still answer "Yes." Indicate in the department row that this resource is provided through contract.

Education and Outreach Capability
Complete the table titled "Education and Outreach."

National Flood Insurance Program Compliance
Complete the table titled "National Flood Insurance Program Compliance."

Community Classifications
Complete the table titled "Community Classifications" to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in the third and fourth columns if your jurisdiction is not participating. If you do not know your current classification, information is available at the following websites:

- **FIPS Code**— https://www.census.gov/geographies/reference-files/2018/demo/popest/2018-fips.html
- **DUNS #**— https://www.dnb.com/duns-number.html
- **Community Rating System**— https://www.fema.gov/floodplain-management/community-rating-system
- **Building Code Effectiveness Grading Schedule**— https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html
- **Public Protection Classification**— https://www.isomitigation.com/ppc/
- **Storm Ready**— https://www.weather.gov/stormready/communities
- **Firewise**— http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx
- **Tsunami Ready**— https://www.weather.gov/tsunamiready/communities

Adaptive Capacity for Climate Change
Consider climate change impact concerns such as the following:

- Reduced snowpack
- Increased wildfires
- Sea level rise
- Inland flooding
- Threats to sensitive species

- Loss in agricultural productivity
- Public health and safety.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating your jurisdiction's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.
- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team after reviewing the results of the other capability assessment tables.

1.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the hazard mitigation plan, and those that offer opportunities for future integration. The simplest way to do this is to review the Planning and Regulatory Capabilities table to see which items were marked as "Yes" under the Integration Opportunity column.

Existing Integration

In the highlighted bullet list, list items for which you entered "Yes" under the Integration Opportunity column of the "Planning and Regulatory Capability" table because the plan or ordinance already addresses potential impacts or includes specific projects that should be included as action items in the mitigation action plan. Consider listing items marked as Completed in the "Status of Previous Plan Actions" table if they were indicated as being ongoing actions. Provide a brief description of how the plan or ordinance is integrated. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects that can help mitigate potential hazards. The City will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code and Fire Code**—The City's adoption of the 2016 California building and fire codes incorporated local modifications to account for the climatic, topographic and geographic conditions that exist in the City.
- **General Plan**—The general plan includes a Safety Element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:
  - Geologic and seismic hazards
  - Fire hazards
  - Hazardous materials
  - Flood control
  - Impacts from climate change.
- **Climate Action Plan**—The City's Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change. These projects were reviewed to identify cross-planning initiates that serve both adaptation and mitigation objectives.

Opportunities for Future Integration
List any remaining items that say "Yes" in the Integration Opportunity column in the Planning and Regulatory Capabilities table and explain the process by which integration could occur. Examples follow:

- **Zoning Code**—The City is conducting a comprehensive update to its zoning code. Additional mitigation and abatement measures will be considered for incorporation into the code.
- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The City does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the goals and objectives identified in the hazard mitigation plan.

After you have accounted for all items marked as "Yes" under the Integration Opportunity column, consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Add any such programs to the integration discussion and provide a brief description of how these programs manage (or could be adapted to manage) risk from hazards.

Information Sources Used for this Annex
This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but be sure to update and enhance any descriptions. Providing this information is a requirement to pass the state and FEMA review process.

Public Outreach
FEMA requirements for public outreach will be met by the County's engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of the plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

1.6 Risk Assessment

Jurisdiction-Specific Natural Hazard Event History
In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Refer to the table below that lists hazard events in the planning area as recognized by the County, the state, and the federal government.

Table 1. Presidential Disaster Declarations for the Planning Area

Dates	FEMA Disaster #/Event Name	County Emergency Op. Center Activated	Gubernatorial Declaration	Presidential Declaration

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, refer to the NOAA storm events database included in the toolkit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include the following

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Emergency management documents (general plan safety element, emergency response plan, etc.)
- Resident input.

If you do not have estimates for costs of damage caused, list "Not Available" in the "Damage Assessment" column or list a brief description of the damage rather than a dollar value (e.g., Main Street closed as a result of flooding, downed trees and residential damage). Note that tracking such damage is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Hazard Risk Ranking
Risk ranking identifies which hazards pose the greatest risk to the community, based on how likely it is for each hazard to occur (this is called the community's exposure) and how great an impact each hazard will have if it does occur (this is called the community's vulnerability). Every jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area. The risk ranking for each jurisdiction has been calculated in the "Loss Matrix" spreadsheet included in the annex preparation toolkit. The ranking is on the basis of risk ranking scores for each hazard that were calculated based on the hazard's probability of occurrence and its potential impact on people, property and the economy.

Jurisdiction-Specific Vulnerabilities

Review the results of the risk assessment included in the toolkit, your jurisdiction's natural events history, and any relevant public comments/input, then develop a few sentences that discuss specific hazard vulnerabilities. You do not need to develop a sentence for every hazard, but identify a few issues you would like to highlight. Also list any known hazard vulnerabilities in your jurisdiction that may not be apparent from the risk assessment and other information provided.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your hazard mitigation action plan. The following are examples of vulnerabilities you could identify through this exercise:

- Over the past 10 years, the jurisdiction has experienced more than $1 million in damage to critical assets from severe storm events.
- 17 critical assets are in areas that would be permanently inundated with 12 inches of sea level rise.
- One significant District asset is not equipped with a generator and four District buildings are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening a District-owned treatment facility.

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. In the space provided, the following information has been included in your annex based on data provided by FEMA:

- The number of any FEMA-identified repetitive-loss properties in your jurisdiction.
- The number of any FEMA-identified severe-repetitive-loss properties in your jurisdiction.
- The number (if any) of repetitive-loss or severe-repetitive-loss properties in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure.

Other Noted Vulnerabilities

Review the results of the risk assessment included in the toolkit, your jurisdiction's natural events history, and any relevant public comments/input, then develop a few sentences that discuss specific hazard vulnerabilities. You do not need to develop a sentence for every hazard, but identify a few issues you would like to highlight. Also list any known hazard vulnerabilities in your jurisdiction that may not be apparent from the risk assessment and other information provided.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your hazard mitigation action plan. The following are examples of vulnerabilities you could identify through this exercise:

- About 45 percent of the population lives in the 0.2 percent annual chance flood hazard area, where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault is estimated to produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than $6 million in damage from severe storm events.
- More than 50 buildings are located in areas that would be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.
- An urban drainage issue at a specific location results in localized flooding every time it rains.

- One area of the community frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, is not equipped with a generator.
- A neighborhood has the potential to have ingress and egress cut off as the result of a flood or earthquake (e.g. a bridge is the only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.
- A large visitor population that may not be aware of tsunami risk.

1.7 Status of Previous Plan Actions

Note that this section only applies to jurisdictions that are conducting updates to previously approved hazard mitigation plans.

All action items identified in prior mitigation plans must be reconciled in this update. Action items must all be marked as **ONE** of the following; check the appropriate box (place an X) and provide information as follows:

- **Completed—**If an action has been completed since the prior plan was prepared, check the "Completed" box and **provide a date of completion in the comment section**. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed and **note that it is ongoing in the comments**. If an action addresses an ongoing program you would like to continue to include in your action plan, see the "Carried Over to Plan Update" bullet below.
- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. **Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support.").** If the wording and/or intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.
- **Carried Over to Plan Update—**If an action is in progress, is ongoing, or has not been initiated and you would like to carry it over to the plan update, check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for this update. If you are carrying over an action to the update, **include a comment describing any action that has been taken or why the action was not taken** (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress).

Ensure that you have provided **a status and a comment for each action.**

1.8 Hazard Mitigation Action Plan

Hazard Mitigation Action Plan Matrix

The hazard mitigation action plan is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan.

Select Recommended Actions

All of the work that you have done thus far should provide you with ideas for actions. Throughout these instructions, green boxes labeled "Hazard Mitigation Action Plan Input" have indicated information that needs to be considered in the selection of mitigation actions. The following sections describe how to consider these and other information sources to develop a list of potential actions.

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing, regardless of grant eligibility.
- Know what is and is not grant-eligible under various federal grant programs (see the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table below).

Table 2. Federal Hazard Mitigation Grant Program Eligibility by Action Type

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

* FEMA allows increasing the 5% initiative amount under the Hazard Mitigation Grant Program up to 10% for a presidential major disaster declaration. The additional 5% initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

** Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Material Previously Developed for This Annex

Capability Assessment Section—Planning and Regulatory Capability Table, Fiscal Capability Table, Administrative and Technical Capability Table, Education and Outreach Table, and Community Classification Table

Review these tables and consider the following:

- For any capability that you do not currently have, consider whether your jurisdiction should have this capability. If so, consider including an action to develop/acquire the capability.
- For any capability that you do currently have, consider whether this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- If any capabilities listed in the Planning and Regulatory Capabilities table have not been updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment.
- Consider including actions that are identified in other plans and programs (capital improvement plans, strategic plans, etc.) as actions in this plan.

Capability Assessment Section—National Flood Insurance Program Compliance Table

Review the table and consider the following:

- If you have no certified floodplain managers and you have flood risk, consider adding an action to provide key staff members with training to obtain certification.
- If your flood damage prevention was last updated in or before 2004, you should identify an action to update your ordinance to ensure it is compliant with current NFIP requirements.
- If you have any outstanding NFIP compliance issues, be sure to add an action to address them.
- If flood hazard maps do not adequately address the flood risk within your jurisdiction, consider actions to request new mapping or conduct studies.
- If you wish to begin to participate in CRS or you already to participate and would like to improve your classification, consider this as an action.
- If the number of flood insurance polices in your jurisdiction is low relative to the number of structures in the floodplain, consider an action that will promote flood insurance in your jurisdiction.

Capability Assessment Section— Adaptive Capacity for Climate Change Table

Consider your responses to this section:

- For criteria that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog).
- For criteria you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity.
- For criteria that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).

Integration Review Section
Review the items you identified in this section and consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated. For items that address land use, include them in the prepopulated action in your template that reads as follows:

> "Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____."

Risk Ranking Section
You must identify at least one mitigation action that is clearly defined and actionable (i.e. not a preparedness or response action) for every hazard that is categorized in the risk ranking as "high" or "medium" risk.

Jurisdiction-Specific Vulnerabilities Section
Review the vulnerability issues that you identified in this section and consider actions to address them (see mitigation best practices catalog). Two examples are shown in the table below.

Table 3. Example Actions to Address Jurisdiction-Specific Vulnerabilities

Noted Vulnerability	Example Mitigation Action
About 45 percent of the population lives in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of relatively low cost flood insurance policies.
An urban drainage issue results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: • The corner of Main Street and 1st Street • Old Oak subdivision.

Status of Previous Plan Actions Section
If your jurisdiction participated in a previous hazard mitigation plan, be sure to include any actions that were identified as "carry over" actions.

Other Sources

Mitigation Best Practices Catalog
A catalog that includes best practices identified by FEMA and other agencies, as well as recommendations from the steering committee and other stakeholders, is included in your toolkit. Review the catalog and identify actions your jurisdiction should consider for its action plan.

Public Input
Review input received during the process, specifically the public survey results included in your toolkit.

Common Actions for All Partners
The following six actions have been prepopulated in your annex template; **these six actions should be included in every annex and should not be removed**:

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.

- Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.
- Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.
- Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:
  - Enforce the flood damage prevention ordinance.
  - Participate in floodplain identification and mapping updates.
  - Provide public assistance/information on floodplain requirements and impacts.
- Identify and pursue strategies to increase adaptive capacity to climate change.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

In addition, the core planning team recommends that every planning partner strongly consider the following actions:

- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.

The specifics of all these common actions should be adjusted as needed for the particulars of each community.

Complete the Table

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

- Enter the action number (see box on next page) and description. **If the action is carried over from your previous hazard mitigation plan, return to the "Status of Previous Plan Actions" table and enter the new action number in the column labeled "Action # in Update."**
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list each hazard by name; simply indicating "all hazards" is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department as responsible for the action, clearly identify one as the lead agency and list the others in the "supporting agency" column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium," or "Low," as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the grant-providing agency as well as funding sources for any required cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table on page 10 of these instructions for project eligibility for FEMA's hazard mitigation assistance grant programs.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or "ongoing" (a continual program)

Mitigation Action Priority

Complete the information in the table titled "Mitigation Action Priority" as follows:

- **Action #**—Indicate the action number from the Hazard Mitigation Action Plan Matrix table.

- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:
  - High—Action will provide an immediate reduction of risk exposure for life and property.
  - Medium—Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.
  - Low—Long-term benefits of the action are difficult to quantify in the short term.
- **Cost**—Enter "High," "Medium" or "Low" as follows:
  - High—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
  - Medium—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - Low—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table on page 10 of these instructions.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:
  - High Priority—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - Medium Priority—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - Low Priority—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.
- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:
  - High Priority—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - Medium Priority—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - Low Priority—An action that has not been identified as meeting any grant eligibility requirements.

Actions identified as high-grant-pursuit priority actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities, a note indicating so should be inserted and a rationale should be provided.

Analysis of Mitigation Actions

In the table titled "Analysis of Mitigation Actions," for each combination of hazard type and mitigation type, enter the numbers of all recommended actions that address that hazard type and can be categorized as that mitigation type. The mitigation types are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education & Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilience**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions. This table must show at least one action to address each "high" and "medium" ranked hazard. Planning partners should aim to identify at least one action for each mitigation type, but this is not required.

An example of a completed "Analysis of Mitigation Actions" table is provided below. Note that an action can be more than one mitigation type.

Sample Completed Table – Analysis of Mitigation Actions

	Action Addressing Hazard, by Mitigation Type							
Hazard Type	**Prevention**	**Property Protection**	**Public Education & Awareness**	**Natural Resource Protection**	**Emergency Services**	**Structural Projects**	**Climate Resilience**	**Community Capacity Building**
High-Risk Hazards								
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Medium-Risk Hazards								

	Action Addressing Hazard, by Mitigation Type							
Hazard Type	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11	EX-6		EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Low-Risk Hazards								
Severe Weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11		EX-8, 7	EX-3, 4, 8, 9, 10
Wildfire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

1.9 Public Outreach

FEMA requirements for public outreach will be met by the County's engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of the plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.)

1.10 Information Sources Used for this Annex

This section should describe what resources you used to complete the annex and how you used them. Providing this information is a requirement to pass the state and FEMA review process.

1.11 Future Needs To Better Understand Risk/Vulnerability

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. **This section is optional.**

1.12 Additional Comments

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. **This section is optional.**

APPENDIX— RISK RANKING CALCULATION METHODOLOGY

The instructions below describe the methodology for how risk rankings were derived in the "Loss Matrix" spreadsheet. The risk-ranking for each hazard assessed its probability of occurrence and its potential impact on people, property, and the economy. Refer to the Loss Matrix spreadsheet in order to follow along.

Probability of Occurrence

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—There is no exposure to the hazard and no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:
  - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the population is exposed to a hazard (Impact Factor = 0)
- **Property**—Values are assigned based on the percentage of the total ***property value exposed*** to the hazard event:
  - High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)
- **Economy**—Values were assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.
  - High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)

- Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
- Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
- No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People
The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column.** For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property
The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column.** For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy
The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **purple highlighted column.** For those hazards that have a defined extent and location, but do not have modelled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard
A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a "high" rating, score between 15 and 30 receive a "medium" rating, and score of less than 15 receives a "low" rating.

CITY/TOWN/COUNTY OF _____

1.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Hazard Mitigation Planning Team Members

Name	Title

1.2 Jurisdiction Profile

1.2.1 Location and Features

___[jurisdiction name]___ is in ___[general location description]___

The current boundaries generally extend from ___[describe]___, encompassing an area of ___[area in square miles]___.

___[general description of key features]___

1.2.2 History

___[jurisdiction name]___ was incorporated in ___[date]___. ___[brief historical summary]___

1.2.3 Governing Body Format

___[general description]___.

The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

1.3 Current Trends

1.3.1 Population

According to ___[identify data source]___, the population of ___[jurisdiction name]___ as of ___[month year]___ was ___[population]___ Since ___[year]___, the population has grown at an average annual rate of ___[number]___ percent.

1.3.2 Development

_DESCRIBE TRENDS IN GENERAL__.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 1-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 1-2. Recent and Expected Future Development Trends

Criterion							Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?							Yes/No
If yes, give the estimated area annexed and estimated number of parcels or structures.							
Is your jurisdiction expected to annex any areas during the performance period of this plan?							Yes/No
If yes, describe land areas and dominant uses.							
If yes, who currently has permitting authority over these areas?							
Are any areas targeted for development or major redevelopment in the next five years?							Yes/No
If yes, briefly describe, including whether any of the areas are in known hazard risk areas							
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?		**2017**	**2018**	**2019**	**2020**	**2021**	
	Single Family	__	__	__	__	__	
	Multi-Family	__	__	__	__	__	
	Other	__	__	__	__	__	
	Total	__	__	__	__	__	
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: # • Landslide: # • High Liquefaction Areas: # • Tsunami Inundation Area: # • Wildfire Risk Areas: #						
Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.							

1.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 1-3.
- Development and permitting capabilities are presented in Table 1-4.
- An assessment of fiscal capabilities is presented in Table 1-5.
- An assessment of administrative and technical capabilities is presented in Table 1-6.
- An assessment of education and outreach capabilities is presented in Table 1-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-8.
- Classifications under various community mitigation programs are presented in Table 1-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 1-10.

Table 1-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, and Requirements				
Building Code	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Zoning Code	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Subdivisions	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Stormwater Management	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Post-Disaster Recovery	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Real Estate Disclosure	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Growth Management	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Site Plan Review	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Environmental Protection	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Flood Damage Prevention	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Emergency Management	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Climate Change	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Other	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Planning Documents				
Comprehensive Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Capital Facilities Plan	Yes/No	Yes/No	Yes/No	Yes/No
How often is the plan updated? _____				
Comment: *Enter Comment*				
Disaster Debris Management Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Floodplain or Watershed Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Stormwater Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Urban Water Management Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Habitat Conservation Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Economic Development Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Shoreline Management Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Community Wildfire Protection Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Forest Management Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Climate Action Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Comprehensive Emergency Management Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Threat and Hazard Identification and Risk Assessment (THIRA)	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Post-Disaster Recovery Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Continuity of Operations Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Public Health Plan	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				
Other	Yes/No	Yes/No	Yes/No	Yes/No
Comment: *Enter Comment*				

Table 1-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes/No
If no, who does? If yes, which department? Enter Response	
Does your jurisdiction have the ability to track permits by hazard area?	Yes/No
Does your jurisdiction have a buildable lands inventory?	Yes/No

Table 1-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas, or Electric Service	Yes/No
If yes, specify: Enter Response	
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other	Yes/No
If yes, specify: Enter Response	

Table 1-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices ***If Yes, Department/Position:*** Enter Response	Yes/No
Engineers or professionals trained in building or infrastructure construction practices ***If Yes, Department/Position:*** Enter Response	Yes/No
Planners or engineers with an understanding of natural hazards ***If Yes, Department/Position:*** Enter Response	Yes/No
Staff with training in benefit/cost analysis ***If Yes, Department/Position:*** Enter Response	Yes/No
Surveyors ***If Yes, Department/Position:*** Enter Response	Yes/No
Personnel skilled or trained in GIS applications ***If Yes, Department/Position:*** Enter Response	Yes/No
Scientist familiar with natural hazards in local area ***If Yes, Department/Position:*** Enter Response	Yes/No
Emergency manager ***If Yes, Department/Position:*** Enter Response	Yes/No
Grant writers ***If Yes, Department/Position:*** Enter Response	Yes/No
Other ***If Yes, Department/Position:*** Enter Response	Yes/No

Table 1-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? ***If yes, briefly describe:*** Enter Response	Yes/No
Do you use social media for hazard mitigation education and outreach? ***If yes, briefly describe:*** Enter Response	Yes/No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? ***If yes, briefly describe:*** Enter Response	Yes/No
Do you have any other programs in place that could be used to communicate hazard-related information? ***If yes, briefly describe:*** Enter Response	Yes/No
Do you have any established warning systems for hazard events? ***If yes, briefly describe:*** Enter Response	Yes/No

Table 1-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Enter Response
Who is your floodplain administrator? (department/position)	Enter Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes/No
What is the date that your flood damage prevention ordinance was last amended?	Enter Response
Does your floodplain management program meet or exceed minimum requirements? ***If exceeds, in what ways?*** Enter Response	Meets/Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	Enter Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? ***If so, state what they are.*** Enter Response	Yes/No
Are any RiskMAP projects currently underway in your jurisdiction? ***If so, state what they are.*** Enter Response	Yes/No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? ***If no, state why.*** Enter Response	Yes/No
Does your floodplain management staff need any assistance or training to support its floodplain management program? ***If so, what type of assistance/training is needed?*** Enter Response	Yes/No
Does your jurisdiction participate in the Community Rating System (CRS)? ***If yes, is your jurisdiction interested in improving its CRS Classification?*** Yes/No ***If no, is your jurisdiction interested in joining the CRS program?*** Yes/No	Yes/No
How many flood insurance policies are in force in your jurisdiction?[a] ***What is the insurance in force?*** $_____ ***What is the premium in force?*** $_____	Enter Response
How many total loss claims have been filed in your jurisdiction?[a] ***How many claims are still open or were closed without payment?*** Enter Response ***What were the total payments for losses?*** $_____	Enter Response

a. According to FEMA statistics as of MONTH XX, 20XX

Table 1-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes/No		Date
DUNS #	Yes/No		Date
Community Rating System	Yes/No		Date
Building Code Effectiveness Grading Schedule	Yes/No		Date
Public Protection	Yes/No		Date
Storm Ready	Yes/No		Date
Firewise	Yes/No		Date

Table 1-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High/Medium/Low
Comment: *Enter Comment*	
Jurisdiction-level monitoring of climate change impacts	High/Medium/Low
Comment: *Enter Comment*	
Technical resources to assess proposed strategies for feasibility and externalities	High/Medium/Low
Comment: *Enter Comment*	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	High/Medium/Low
Comment: *Enter Comment*	
Capital planning and land use decisions informed by potential climate impacts	High/Medium/Low
Comment: *Enter Comment*	
Participation in regional groups addressing climate risks	High/Medium/Low
Comment: *Enter Comment*	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High/Medium/Low
Comment: *Enter Comment*	
Identified strategies for greenhouse gas mitigation efforts	High/Medium/Low
Comment: *Enter Comment*	
Identified strategies for adaptation to impacts	High/Medium/Low
Comment: *Enter Comment*	
Champions for climate action in local government departments	High/Medium/Low
Comment: *Enter Comment*	
Political support for implementing climate change adaptation strategies	High/Medium/Low
Comment: *Enter Comment*	
Financial resources devoted to climate change adaptation	High/Medium/Low
Comment: *Enter Comment*	
Local authority over sectors likely to be negatively impacted	High/Medium/Low
Comment: *Enter Comment*	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	High/Medium/Low
Comment: *Enter Comment*	
Local residents' support of adaptation efforts	High/Medium/Low
Comment: *Enter Comment*	
Local residents' capacity to adapt to climate impacts	High/Medium/Low
Comment: *Enter Comment*	
Local economy's current capacity to adapt to climate impacts	High/Medium/Low
Comment: *Enter Comment*	
Local ecosystem's capacity to adapt to climate impacts	High/Medium/Low
Comment: *Enter Comment*	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

1.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

1.6 Risk Assessment

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-11 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-11. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.6.2 Hazard Risk Ranking

Table 1-12 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 1-12. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	_____	_____	High/Medium/Low
2	_____	_____	High/Medium/Low
3	_____	_____	High/Medium/Low
4	_____	_____	High/Medium/Low
5	_____	_____	High/Medium/Low
6	_____	_____	High/Medium/Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

1.6.4 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: XX
- Number of FEMA-identified Severe-Repetitive-Loss Properties: XX
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: XX

1.6.5 Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

1.7 Status of Previous Plan Actions

Table 1-13 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-13. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Insert Action Number and Text ***Comment:*** *Enter Comment*				
Insert Action Number and Text ***Comment:*** *Enter Comment*				
Insert Action Number and Text ***Comment:*** *Enter Comment*				
Insert Action Number and Text ***Comment:*** *Enter Comment*				
Insert Action Number and Text ***Comment:*** *Enter Comment*				

1.8 Hazard Mitigation Action Plan

Table 1-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 1-15 identifies the priority for each action. Table 1-16 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-14. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Enter Response					
Existing	Enter Response	Enter Response	Enter Response	High	HMGP, BRIC, FMA	Short-term
Action xxx-2— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____.						
Hazards Mitigated:	Enter Response					
New and Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Ongoing
Action xxx-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Enter Response					
New and Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
Action xxx-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated:	Enter Response					
New and Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Ongoing
Action xxx-5—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following: • _____.						
Hazards Mitigated:	Enter Response					
New and Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
Action xxx-6— Purchase generators for critical facilities and infrastructure that lack adequate backup power, including _____.						
Hazards Mitigated:	Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire					
Existing	Enter Response	Enter Response	Enter Response			

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing = Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 1-15. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1								
2								
3								
4								
5								
6								
7								
8								

Table 1-16. Analysis of Mitigation Actions

	Action Addressing Hazard, by Mitigation Type[a]							
Hazard Type	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Medium-Risk Hazards								
Low-Risk Hazards								

1.9 Public Outreach

Table 1-17 lists public outreach activities for this jurisdiction.

Table 1-17. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved

1.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **___[jurisdiction name]___ Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **___[jurisdiction name]___ Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.11 Future Needs to Better Understand Risk/Vulnerability

Insert text, if any; otherwise, delete section.

1.12 Additional Comments

Insert text, if any; otherwise, delete section.

Appendix D
District Annex
Instructions and Templates for Districts

1.1 Local Hazard Mitigation Planning Team

Points of Contact
Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating, and updating the annex for your jurisdiction.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Participating Planning Team
Populate Table 1-1 with the names of staff from your jurisdiction who participated in preparing this annex or otherwise contributed to the planning process for this hazard mitigation plan.

1.2 Jurisdiction Profile

Overview
Provide a brief summary description of the following:

- The purpose of the jurisdiction
- The date of inception
- The type of organization
- The number of employees
- Funding sources
- The type of governing body, and who has adoptive authority.

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

EXAMPLE: The Johnsonville Community Services District is a special district created in 1952 to provide water and sewer service. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. The District currently employs a staff of 21. Funding comes primarily through rates and revenue bonds.

Service Area
Provide a brief description of the following:

- Who the District's customers are and an approximation of how many are currently served
- The area served, in square miles
- The geographic extent of the service area

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

EXAMPLE: The Johnsonville Community Services District serves unincorporated areas of Jones County east of the City of Smithburg, including the communities of Johnsonville, Creeks Corner, Jones Hill, Fields Landing, King Salmon, and Freshwater. The current total service area is 3.3 square miles. As of April 30, 2020, the District serves 7,305 water connections and 6,108 sewer connections.

Assets
List District-owned assets in the categories shown on the table (and described in the sections below). Include an approximate value for each asset and a subtotal value for identified assets in each category.

Property
Provide an approximate value for any land owned by the District.

Equipment
List equipment owned by the District that is used in times of emergency or that, if incapacitated, could severely impact the service area (vehicles, generators, pumps, etc.). Provide an approximate replacement value for each item. Equipment of similar type may be listed as a single category (e.g., "3 diesel-powered generators"). For water and sewer districts, include mileage of pipeline under this category.

Critical Facilities
List District-owned facilities that are vital to maintain services to the service area. Include the address of each facility. Provide an approximate replacement value for each line. Critical facilities are generally defined as facilities owned by the District that are critical to District operations and to public health or safety and that are especially important following hazard events, including but not limited to the following:

- Structures or facilities that produce, use, or store hazardous materials (highly volatile, flammable, explosive, toxic and/or water-reactive materials)
- Hospitals, nursing homes, and housing facilities likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a natural hazard event
- Mass gathering facilities that may be used as evacuation shelters (such as schools or community centers)
- Transportation infrastructure such as roads, bridges and airports that provide sources for evacuation before, during and after natural hazard events
- Police stations, fire stations, government facilities, vehicle equipment and storage facilities, and emergency operation centers that are needed for response activities before, during and after a natural hazard event
- Public utility facilities such as drinking water, stormwater, and wastewater systems that are vital to providing normal services to damaged areas before, during and after natural hazard events.

The table below shows an example of assets to be listed in this section.

NOTE: Placeholders in the table of assets request **ADDRESSES** for critical facilities. These addresses will not be included in the final published annex, but are needed in order to perform risk mapping and risk analysis for the hazard mitigation plan. Include the addresses in the table if convenient. If not, then provide a separate document listing all critical facilities and addresses for use in development of the hazard mitigation plan.

Sample Completed Table – Special District Assets

Asset	Value
Property	
11.5 Acres	$5,750,000
Equipment	
Total length of pipe 40 miles ($1.32 million per mile X 40 miles)	$52,800,000
4 Emergency Generators	$250,000
Total:	***$53,050,000***
Critical Facilities	
Administrative Buildings – 357 S. Jones Street	$2,750,000
Philips Pump Station – 111 Fifth Avenue N.	$377,000
Total:	***$3,127,000***

1.3 Current Trends

Provide a brief description of previous growth trends in the service area and anticipated future increase or decrease in services (if applicable). This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

> **EXAMPLE:** The Johnsonville Community Services District originally was formed to serve only the Johnsonville area. The District's service area expanded throughout the years to include the full area served today. Total customers have increased by 3 percent since 2010. Population in the service area is not projected to change significantly over the next 10 years, and the District has no plans to expand its service area.

1.4 Capability Assessment

Planning and Regulatory Capability

List any federal, state, local or district ordinances, plans, or policies that apply to your jurisdiction and relate to hazard mitigation. Provide the date of last update and any comments as appropriate. The table below shows an example of items to be listed in this section.

Sample Completed Table – Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
District Design Standards	2010	
Capital Improvement Program	Updated annually	covers 5 year timeframe
Emergency Operations Plan	2000	
Facility Maintenance Manual	1990	
State Building Code	2016	
Division of State Architects		Review of all building and site design features is required prior to construction

Fiscal Capability
Complete the table titled "Fiscal Capability" by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter "Yes" if the resource is fully accessible to your jurisdiction. Enter "No" if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability
Complete the table titled "Administrative and Technical Capability" by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter "Yes" or "No" in the column labeled "Available?". If yes, then enter the department and position title. If you have contract support with these capabilities, you can still answer "Yes." Indicate in the department row that this resource is provided through contract.

Education and Outreach Capability
Complete the table titled "Education and Outreach."

Community Classifications
Complete the table titled "Community Classifications" to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in the third and fourth columns if your jurisdiction is not participating. If you do not know your current classification, information is available at the following websites:

- **FIPS Code**— https://www.census.gov/geographies/reference-files/2018/demo/popest/2018-fips.html
- **DUNS #**— https://www.dnb.com/duns-number.html
- **Community Rating System**— https://www.fema.gov/floodplain-management/community-rating-system
- **Building Code Effectiveness Grading Schedule**— https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html
- **Public Protection Classification**— https://www.isomitigation.com/ppc/
- **Storm Ready**— https://www.weather.gov/stormready/communities
- **Firewise**— http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx
- **Tsunami Ready**— https://www.weather.gov/tsunamiready/communities

Adaptive Capacity for Climate Change
Consider climate change impact concerns such as the following:

- Reduced snowpack
- Increased wildfires
- Sea level rise
- Inland flooding
- Threats to sensitive species
- Loss in agricultural productivity
- Public health and safety

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating your jurisdiction's capacity for each listed criterion as follows:

- **High** — The capacity exists and is in use.
- **Medium** — The capacity may exist, but is not used or could use some improvement.
- **Low** — The capacity does not exist or could use substantial improvement.
- **Unsure** — Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team after reviewing the results of the other capability assessment tables.

1.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the hazard mitigation plan, and those that offer opportunities for future integration.

Existing Integration
In the highlighted bullet list, provide a brief description of integrated plans or ordinances and how each is integrated. Consider listing items marked as Completed in the "Status of Previous Plan Actions" table if they were indicated as being ongoing actions. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects that can help mitigate potential hazards. The District will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Emergency Operations Plan**—The results of the risk assessment were used in the development of the emergency operations plan.
- **Facilities Plan**—The results of the risk assessment and mapped hazard areas are used in facility planning for the District. Potential sites are reviewed for hazard risks, and appropriate mitigation measures are considered in building and site design.

Opportunities for Future Integration
List any plans or programs that offer the potential for future integration and describe the process by which integration will occur. Examples follow:

- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The District does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

Consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

1.6 Risk Assessment

Jurisdiction-Specific Natural Hazard Event History
In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Refer to the table below that lists hazard events in the planning area as recognized by the County, the state, and the federal government.

Table 1. Presidential Disaster Declarations for the Planning Area

Dates	FEMA Disaster #/Event Name	County Emergency Op. Center Activated	Gubernatorial Declaration	Presidential Declaration

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, refer to the NOAA storm events database included in the toolkit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include the following

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Emergency management documents (general plan safety element, emergency response plan, etc.)
- Resident input.

If you do not have estimates for costs of damage caused, list "Not Available" in the "Damage Assessment" column or list a brief description of the damage rather than a dollar value (e.g., Main Street closed as a result of flooding, downed trees and residential damage). Note that tracking such damage is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Hazard Risk Ranking
Risk ranking identifies which hazards pose the greatest risk to the community, based on how likely it is for each hazard to occur (this is called the community's exposure) and how great an impact each hazard will have if it does occur (this is called the community's vulnerability). Every jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area. Risk rankings for cities and the county have

been calculated in the "Loss Matrix" spreadsheet included in the annex preparation toolkit. These rankings are on the basis of risk ranking scores for each hazard that were calculated based on the hazard's probability of occurrence and its potential impact on people, property and the economy.

The risk ranking methodology used for cities and counties is not usable for special-purpose districts because the risk-related mapping generally does not align with the boundaries of districts. To rank risk for your District, use the following procedure:

- Find the risk ranking scores in the Loss Matrix spreadsheet (on the "Risk Ranking Summary" tab) for the county overall and for any cities whose area overlaps that of your District.
- For each hazard, generate a risk ranking score for your District by calculating the average of the scores for those other jurisdictions.
- Rank the hazards based on those average scores:
  - Assign the rank of 1 to the hazard with the highest risk ranking score, the rank of 2 to the hazard with the second highest ranking score; and so on.
  - Assign the same rank to any two hazards with equal risk ranking scores
- If the resulting ranking differs from what you know based on substantiated data and documentation, alter the scores and ranking as needed based on this knowledge.
- Assign each hazard to the risk category of "High," Medium," or "Low" based on the risk rating score:
  - Low for scores of 0 to 15
  - Medium for scores of 16 to 30
  - High for scores greater than 30

Enter the results of this analysis in the "Hazard Risk Ranking" table in the template; enter the hazards in order of ranking, with 1 at the top of the table.

Jurisdiction-Specific Vulnerabilities

Review the results of the risk assessment included in the toolkit, your jurisdiction's natural events history, and any relevant public comments/input, then develop a few sentences that discuss specific hazard vulnerabilities. You do not need to develop a sentence for every hazard, but identify a few issues you would like to highlight. Also list any known hazard vulnerabilities in your jurisdiction that may not be apparent from the risk assessment and other information provided.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your hazard mitigation action plan. The following are examples of vulnerabilities you could identify through this exercise:

- Over the past 10 years, the jurisdiction has experienced more than $1 million in damage to critical assets from severe storm events.
- 17 critical assets are in areas that would be permanently inundated with 12 inches of sea level rise.
- One significant District asset is not equipped with a generator and four District buildings are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening a District-owned treatment facility.

1.7 Status of Previous Plan Actions

Note that this section applies only to jurisdictions that are conducting updates to previously approved hazard mitigation plans. If your jurisdiction has not previously participated in an approved plan, do not complete the section.

The hazard mitigation plan update must describe the status of all action items from each jurisdiction's previous hazard mitigation plan. Each action item must be marked as ONE of the options below by checking the appropriate box (place an X) and providing the following information:

- **Completed—**If an action has been completed since the prior plan was prepared, check the "Completed" box and **provide a date of completion in the comment section**. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed and **note that it is ongoing in the comments**. If an action addresses an ongoing program you would like to continue to include in your action plan, see the "Carried Over to Plan Update" bullet below.
- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. **Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support.").** If the wording and/or intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.
- **Carried Over to Plan Update—**If an action is in progress, is ongoing, or has not been initiated and you would like to carry it over to the plan update, check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for this update. If you are carrying over an action to the update, **include a comment describing any action that has been taken or why the action was not taken** (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress).

Ensure that you have provided **a status and a comment for each action.**

1.8 Hazard Mitigation Action Plan

Hazard Mitigation Action Plan Matrix
The hazard mitigation action plan is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan.

Select Recommended Actions
All of the work that you have done thus far should provide you with ideas for actions. Throughout these instructions, green boxes labeled "Hazard Mitigation Action Plan Input" have indicated information that needs to be considered in the selection of mitigation actions. The following sections describe how to consider these and other information sources to develop a list of potential actions.
Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing, regardless of grant eligibility.
- Know what is and is not grant-eligible under various federal grant programs (see the fact sheet on FEMA hazard mitigation grant programs in the toolkit and the table on the next page).

Material Previously Developed for This Annex

Capability Assessment Section—Planning and Regulatory Capability Table, Fiscal Capability Table, Administrative and Technical Capability Table, and Education and Outreach Table
Review these tables and consider the following:

- For any capability that you do not currently have, consider whether your jurisdiction should have this capability. If so, consider including an action to develop/acquire the capability.
- For any capability that you do currently have, consider whether this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- If any items listed in the Planning and Regulatory Capabilities table have not been updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment.
- Consider including actions that are identified in other plans and programs (capital improvement plans, strategic plans, etc.) as actions in this plan.

Capability Assessment Section— Adaptive Capacity for Climate Change Table
Consider your responses to this section:

- For criteria that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog).
- For criteria you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity.
- For criteria that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).

Integration Review Section
Review the items you identified in this section and consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.

Risk Ranking Section
You must identify at least one mitigation action that is clearly defined and actionable (i.e. not a preparedness or response action) for every hazard that is categorized in the risk ranking as “high” or “medium” risk.

Jurisdiction-Specific Vulnerabilities Section
Review the vulnerability issues that you identified in this section and consider actions to address them (see mitigation best practices catalog).

Status of Previous Plan Actions Section
If your jurisdiction participated in a previous hazard mitigation plan, be sure to include any actions that were identified as “carry over” actions.

Table 2. Federal Hazard Mitigation Grant Program Eligibility by Action Type

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildfire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

* FEMA allows increasing the 5% initiative amount under the Hazard Mitigation Grant Program up to 10% for a presidential major disaster declaration. The additional 5% initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

** Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Other Sources

Mitigation Best Practices Catalog
A catalog that includes best practices identified by FEMA and other agencies, as well as recommendations from the steering committee and other stakeholders, is included in your toolkit. Review the catalog and identify actions your jurisdiction should consider for its action plan.

Public Input
Review input received during the process, specifically the public survey results included in your toolkit.

Common Actions for All Partners
The following three actions have been prepopulated in your annex template; **these three actions should be included in every annex and should not be removed**:

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.

- Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

In addition, the core planning team recommends that every planning partner strongly consider the following actions:

- Identify and pursue strategies to increase adaptive capacity to climate change.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.

The specifics of all these common actions should be adjusted as needed for the particulars of each community.

Complete the Table

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

- Enter the action number (see box at right) and description.
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list each hazard by name; simply indicating "all hazards" is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department as responsible for the action, clearly identify one as the lead agency and list the others in the "supporting agency" column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium," or "Low," as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the grant-providing agency as well as funding sources for any required cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table on page 9 of these instructions for project eligibility for FEMA's hazard mitigation assistance grant programs.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or "ongoing" (a continual program)

Mitigation Action Priority

Complete the information in the table titled "Mitigation Action Priority" as follows:

- **Action #**—Indicate the action number from the Hazard Mitigation Action Plan Matrix table.
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:
  - High—Action will provide an immediate reduction of risk exposure for life and property.
  - Medium—Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.
  - Low—Long-term benefits of the action are difficult to quantify in the short term.
- **Cost**—Enter "High," "Medium" or "Low" as follows:

  - High—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
  - Medium—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - Low—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table on page 9 of these instructions.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:
  - High Priority—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - Medium Priority—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - Low Priority—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.
- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:
  - High Priority—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - Medium Priority—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - Low Priority—An action that has not been identified as meeting any grant eligibility requirements.

Actions identified as high-grant-pursuit priority actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities, a note indicating so should be inserted and a rationale should be provided.

Analysis of Mitigation Actions

In the table titled "Analysis of Mitigation Actions," for each combination of hazard type and mitigation type, enter the numbers of all recommended actions that address that hazard type and can be categorized as that mitigation type. The mitigation types are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.

- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education & Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilience**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions. This table must show at least one action to address each "high" and "medium" ranked hazard. Planning partners should aim to identify at least one action for each mitigation type, but this is not required.

An example of a completed "Analysis of Mitigation Actions" table is provided below. Note that an action can be more than one mitigation type.

1.9 Public Outreach

This table should record local public outreach efforts made by your jurisdiction to inform the community of this hazard mitigation plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.)

Sample Completed Table – Analysis of Mitigation Actions

	Action Addressing Hazard, by Mitigation Type							
Hazard Type	**Prevention**	**Property Protection**	**Public Education & Awareness**	**Natural Resource Protection**	**Emergency Services**	**Structural Projects**	**Climate Resilience**	**Community Capacity Building**
High-Risk Hazards								
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Medium-Risk Hazards								

	Action Addressing Hazard, by Mitigation Type							
Hazard Type	**Prevention**	**Property Protection**	**Public Education & Awareness**	**Natural Resource Protection**	**Emergency Services**	**Structural Projects**	**Climate Resilience**	**Community Capacity Building**
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11	EX-6		EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Low-Risk Hazards								
Severe Weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11		EX-8, 7	EX-3, 4, 8, 9, 10
Wildfire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

1.10 Information Sources Used for this Annex

This section should describe what resources you used to complete the annex and how you used them. Providing this information is a requirement to pass the state and FEMA review process.

1.11 Future Needs to Better Understand Risk/Vulnerability

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. **This section is optional.**

1.12 Additional Comments

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. **This section is optional.**

DISTRICT NAME

1.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table **Error! No text of specified style in document.**-1.

Table 1-1. Local Hazard Mitigation Planning Team Members.

Name	Title

1.2 Jurisdiction Profile

1.2.1 Overview

Insert Narrative Profile Information, per Instructions.

The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

All fire districts should include the following sentence (non-fire special purpose districts should delete the sentence):

The District participates/does not participate in the Public Protection Class Rating System and currently has a rating of #.

1.2.2 Service Area

The District service area covers ___[area in square miles]___, serving a population of _ population_.

1.2.3 Assets

Table 1-2 summarizes the assets of the District and their value.

1-2. Special Purpose District Assets.

Asset	Value
Property	
number acres of land	$_value_
Equipment	
description	$_value_
description	$_value_
description	$_value_
description	$_value_
description	$_value_
Total:	***$_value_***
Critical Facilities	
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
Total:	***$_value_***

1.3 Current Trends

Insert summary description of service trends.

1.4 Capability Assessment

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The "Analysis of Mitigation Actions" table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table **Error! No text of specified style in document.**-3.
- An assessment of fiscal capabilities is presented in Table **Error! No text of specified style in document.**-4.
- An assessment of administrative and technical capabilities is presented in Table 1- 5.
- An assessment of education and outreach capabilities is presented in Table 1 -6.
- Classifications under various community mitigation programs are presented in Table 1 -7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 1-8.

Table 1 -3. Planning and Regulatory Capability.

Plan, Study, or Program	Date of Most Recent Update	Comment
Name of code, ordinance, policy, program, or plan	_____	_____
Name of code, ordinance, policy, program, or plan	_____	_____
Name of code, ordinance, policy, program, or plan	_____	_____
Name of code, ordinance, policy, program, or plan	_____	_____
Name of code, ordinance, policy, program, or plan	_____	_____

Table 1 -4. Fiscal Capability.

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas, or Electric Service	Yes/No
If yes, specify: Enter Response	
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other	Yes/No
If yes, specify: Enter Response	

Table 1-5. Administrative and Technical Capability.

Staff/Personnel Resource		Available?
Planners or engineers with knowledge of land development and land management practices		Yes/No
If Yes, Department/Position:	Enter Response	
Engineers or professionals trained in building or infrastructure construction practices		Yes/No
If Yes, Department/Position:	Enter Response	
Planners or engineers with an understanding of natural hazards		Yes/No
If Yes, Department/Position:	Enter Response	
Staff with training in benefit/cost analysis		Yes/No
If Yes, Department/Position:	Enter Response	
Surveyors		Yes/No
If Yes, Department/Position:	Enter Response	
Personnel skilled or trained in GIS applications		Yes/No
If Yes, Department/Position:	Enter Response	
Scientist familiar with natural hazards in local area		Yes/No
If Yes, Department/Position:	Enter Response	
Emergency manager		Yes/No
If Yes, Department/Position:	Enter Response	
Grant writers		Yes/No
If Yes, Department/Position:	Enter Response	
Other		Yes/No
If Yes, Department/Position:	Enter Response	

Table 1 -6. Education and Outreach Capability.

Criterion		Response
Do you have a public information officer or communications office?		Yes/No
Do you have personnel skilled or trained in website development?		Yes/No
Do you have hazard mitigation information available on your website?		Yes/No
If yes, briefly describe:	Enter Response	
Do you use social media for hazard mitigation education and outreach?		Yes/No
If yes, briefly describe:	Enter Response	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?		Yes/No
If yes, briefly describe:	Enter Response	
Do you have any other programs in place that could be used to communicate hazard-related information?		Yes/No
If yes, briefly describe:	Enter Response	
Do you have any established warning systems for hazard events?		Yes/No
If yes, briefly describe:	Enter Response	

Table 1-7. Community Classifications.

	Participating?	Classification	Date Classified
FIPS Code	Yes/No	_____	Date
DUNS#	Yes/No	_____	Date
Community Rating System	Yes/No	_____	Date
Building Code Effectiveness Grading Schedule	Yes/No	_____	Date
Public Protection	Yes/No	_____	Date
Storm Ready	Yes/No	_____	Date
Firewise	Yes/No	_____	Date

Table 1 -8. Adaptive Capacity for Climate Change.

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High/Medium/Low
Comment: *Enter Comment*	
Jurisdiction-level monitoring of climate change impacts	High/Medium/Low
Comment: *Enter Comment*	
Technical resources to assess proposed strategies for feasibility and externalities	High/Medium/Low
Comment: *Enter Comment*	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	High/Medium/Low
Comment: *Enter Comment*	
Capital planning and land use decisions informed by potential climate impacts	High/Medium/Low
Comment: *Enter Comment*	
Participation in regional groups addressing climate risks	High/Medium/Low
Comment: *Enter Comment*	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High/Medium/Low
Comment: *Enter Comment*	
Identified strategies for greenhouse gas mitigation efforts	High/Medium/Low
Comment: *Enter Comment*	
Identified strategies for adaptation to impacts	High/Medium/Low
Comment: *Enter Comment*	
Champions for climate action in local government departments	High/Medium/Low
Comment: *Enter Comment*	
Political support for implementing climate change adaptation strategies	High/Medium/Low
Comment: *Enter Comment*	
Financial resources devoted to climate change adaptation	High/Medium/Low
Comment: *Enter Comment*	
Local authority over sectors likely to be negatively impacted	High/Medium/Low
Comment: *Enter Comment*	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	High/Medium/Low
Comment: *Enter Comment*	

Criterion		Jurisdiction Rating[a]
Local residents' support of adaptation efforts		High/Medium/Low
Comment:	*Enter Comment*	
Local residents' capacity to adapt to climate impacts		High/Medium/Low
Comment:	*Enter Comment*	
Local economy's current capacity to adapt to climate impacts		High/Medium/Low
Comment:	*Enter Comment*	
Local ecosystem's capacity to adapt to climate impacts		High/Medium/Low
Comment:	*Enter Comment*	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

1.5 Integration Review

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

1.6 Risk Assessment

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-9. Past Natural Hazard Events.

Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.6.2 Hazard Risk Ranking

Table 1 -10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 1-10. Hazard Risk Ranking.

Rank	Hazard	Risk Ranking Score	Risk Category
1	_____	_____	High/Medium/Low
2	_____	_____	High/Medium/Low
3	_____	_____	High/Medium/Low
4	_____	_____	High/Medium/Low
5	_____	_____	High/Medium/Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.

- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

1.7 Status of Previous Plan Actions

Table 1- 11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1 -11. Status of Previous Plan Actions.

Action Item from Previous Plan		Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Insert Action Number and Text					
Comment:	*Enter Comment*				
Insert Action Number and Text					
Comment:	*Enter Comment*				
Insert Action Number and Text					
Comment:	*Enter Comment*				
Insert Action Number and Text					
Comment:	*Enter Comment*				
Insert Action Number and Text					
Comment:	*Enter Comment*				
Insert Action Number and Text					
Comment:	*Enter Comment*				

1.8 Hazard Mitigation Action Plan

Table 1 -12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 1 -13 identifies the priority for each action. Table **Error! No text of specified style in document.**1-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-12. Hazard Mitigation Action Plan Matrix.

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-1—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated:	Enter Response					
Existing	Enter Response	Enter Response	Enter Response	High	HMGP, BRIC, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Enter Response					
New and Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
Action xxx-3— Purchase generators for critical facilities and infrastructure that lack adequate backup power, including _____.						
Hazards Mitigated:	Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire					
Existing	Enter Response	Enter Response	Enter Response			
Action xxx-4—Description						
Hazards Mitigated:	Enter Response					
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
Action xxx-5—Description						
Hazards Mitigated:	Enter Response					
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing = Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 1 -13. Mitigation Action Priority.

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
1	_____	_____	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____	_____	_____
6	_____	_____	_____	_____	_____	_____	_____	_____

a. See the introduction to this volume for explanation of priorities.

Table 1-14. Analysis of Mitigation Actions.

	Action Addressing Hazard, by Mitigation Type[a]							
Hazard Type	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
Medium-Risk Hazards								
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
Low-Risk Hazards								
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

1.9 Public Outreach

Table 1- 15 lists public outreach activities for this jurisdiction.

Table 1 -15. Local Public Outreach.

Local Outreach Activity	Date	Number of People Involved

1.10 Information Sources Used for This Annex

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.11 Future Needs to Better Understand Risk/Vulnerability

Insert text, if any; otherwise, delete section.

1.12 Additional Comments

Insert text, if any; otherwise, delete section.