Skamania County

Multi-Jurisdictional

Natural Hazards Mitigation Plan

2021

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APPENDICES:

Chapter 1. Introduction

Purpose

This updated Hazard Mitigation Plan (HMP) for Skamania County is a multi-jurisdictional plan that identifies and also addresses those natural hazards that represent a potential threat to Skamania County and its residents. In this Plan, these natural hazards will be identified and prioritized as to their significance to the County and its jurisdictions, and the mitigation efforts and projects that have been implemented and are anticipated to be implemented will be outlined in order to lessen exposure to these hazards.

In the past, natural hazards such as severe storms, flooding, landslides, wildfire, earthquakes, and volcanic eruptions have affected residents, property, environment, and infrastructure in Skamania County. This Plan's objective is to point the way to disaster risk reduction through mitigation efforts and activities based on the natural hazards with which the County and its jurisdictions are confronted with.

Natural Hazards in Skamania County

Skamania County in Southwest Washington State expands approximately 40 miles east to west and approximately 50 miles north from the Columbia River, for a total of 1,656 square miles. The topography is varied and ranges from lowlands along the Columbia River and gentle sloping toward the foothills to mountainous uplands of the Cascades. Ninety percent of the County is mountainous evergreen forest (over 1 million acres) with some farmland in the southwest and some orchards in the southeast corner of the County. The Columbia River and its Gorge as well as the proximity to the Pacific Ocean are strong influences on Skamania County's climate, which is mild but variable. Temperatures and rainfall grow warmer and drier from West to East.

The scenic and beautiful Columbia River Gorge also accommodates the important East-West transportation infrastructure, State Route 14 and the BNSF railroad, connecting the County to the Portland/Vancouver metropolitan area in the West and The Dalles and Tri Cities in the East. The Columbia River is the only water-grade route through the Cascades, and a vital economic supply channel carrying many agricultural goods and products from Eastern Washington to the Ports of Vancouver, Kalama, and Longview for U.S. export business.

In the past 60 years, Skamania County was affected by disasters significant enough to be included in 16 Federal Disaster Declarations. Additionally, there were at least six additional calamities caused by natural hazards that did not rise to the level of a Local Emergency or a Federal Disaster Declaration.

Federal Disaster Declarations that included Skamania County		
Date	**Event**	**Affected Counties/Recipients**
February 2017	Severe Winter Storms, Flooding, Landslides, and Mudslides (DR-4309)	Adams, Benton, Columbia, Ferry, Franklin, Grant, King, Lewis, Lincoln, Pend Oreille, Skamania, Spokane, Wahkiakum, Walla Walla, Whatcom
December 2015	Severe Winter Storm, Straight-Line Winds, Flooding, Landslides, Mudslides, Tornado (DR-4253)	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Wahkiakum
November 2015	Severe Storms, Straight-line Winds, Flooding, Landslides, and Mudslides (DR-4249)	Chelan, Clallam, Garfield, Island, Jefferson, Kittitas, Lewis, Lincoln, Mason, Pend Oreille, Skamania, Snohomish, Spokane, Stevens, Wahkiakum, Whitman
January 2012	Severe Winter Storm, Flooding, Landslides, and Mudslides (DR-4056)	Clallam, Grays Harbor, King, Klickitat, Lewis, Mason, Pierce, Skamania, Snohomish, Thurston, Wahkiakum
January 2011	Severe Winter Storm, Flooding, Landslides, and Mudslides (DR-1963)	King, Kittitas, Klickitat, Lewis, Skagit, Skamania, Wahkiakum
December 2008	Severe Winter Storm and Record and Near Record Snow (DR-1825)	King, Kittitas, Klickitat, Lewis, Skagit, Skamania, Wahkiakum
January 2009	Severe Winter Storm, Landslides, Mudslides, and Flooding (DR-1817)	Benton, Chelan, Clallam, Columbia, Cowlitz, Garfield, Grays Harbor, Jefferson, King, Kittitas, Klickitat, Lewis, Lincoln, Mason, Pacific, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, Whatcom, Yakima
December 2006	Severe Winter Storm, Landslides, and Mudslides (DR-1682)	Chelan, Clallam, Clark, Grant, Grays Harbor, Island, King, Klickitat, Lewis, Mason, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Thurston, Wahkiakum
November 2006	Severe Storms, Flooding, Landslides, and Mudslides (DR-1671)	Chelan, Clark, Cowlitz, Grays Harbor, Jefferson, King, Lewis, Pacific, Pierce, Skagit, Skamania, Snohomish, Wahkiakum
March 2001	Washington Earthquake (DR-1361)	Benton, Chelan, Clallam, Clark, Cowlitz, Grays Harbor, Island, Jefferson, King,

		Kitsap, Kittitas, Lewis, Mason, Pacific, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, Whatcom, Yakima
December 1996	Severe Winter Storms/Flooding (DR-1159)	Adams, Asotin, Benton, Chelan, Clallam, Clark, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Whatcom, Whitman, Yakima
February 1996	Severe Storms/Flooding (DR-1100)	Adams, Asotin, Benton, Clark, Columbia, Cowlitz, Garfield, Grays Harbor, King, Kittitas, Klickitat, Lewis, Lincoln, Pierce, Skagit, Skamania, Snohomish, Spokane, Thurston, Wahkiakum, Walla Walla, Whitman, Yakima
May 1980	Volcanic Eruption, Mount St. Helens (DR-623)	Adams, Asotin, Benton, Chelan, Clallam, Clark, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Wahkiakum, Whatcom, Whitman, Yakima
December 1977	Severe Storms, Mudslides, Flooding (DR-545)	Benton, Clark, Cowlitz, Garfield, Grays Harbor, King, Kittitas, Klickitat, Lewis, Pacific, Pierce, Skamania, Snohomish, Thurston, Wahkiakum, Whatcom, Whitman, Yakima
February 1972	Severe Storms, Flooding (DR-322)	Asotin, Cowlitz, Grays Harbor, Lewis, Pacific, Skamania, Thurston, Wahkiakum, Whitman
December 1964	Heavy Rains & Flooding (DR-185)	Asotin, Benton, Clark, Columbia, Cowlitz, Garfield, Grays Harbor, King, Kittitas, Klickitat, Lewis, Mason, Pacific, Pierce, Skamania, Snohomish, Spokane, Wahkiakum, Walla Walla, Whitman, Yakima

Here are six additional significant events that did not rise to the level of a Federal Declaration or did not even rise to a declaration of a local emergency:

- An **avalanche** event causing 5 deaths in 1975
- The Statewide extreme **drought** in 1977
- A severe localized **wind storm** in 1985
- A serious **landslide** in in 1996
- A 3.1 **earthquake** in 1998, and
- A **wildfire** causing evacuation of 400 residents in 2017

Of the above listed 22 events triggered through natural hazards, the majority (15 events) were associated with winter storms mostly combined with flooding, slides, and wind. There were two (2) earthquake events and one (1) each associated with wildfire, volcano, drought, and avalanche.

Plan Development, Adoption, Implementation, Monitoring, and Maintenance

Plan Development and Review History

While the efforts to update the 2010 version of the Skamania County Hazard Mitigation Plan did not start until 2019, that Plan was monitored and adjusted as appropriate in accordance with that Plan's guidelines.

The focus of the current revision was on simplification, streamlining the flow of information, and eliminating duplications while enhancing the participation of annexing jurisdictions and ensuring conformance with FEMA requirements. In this process, the County-wide section was revised to include all information that is common and shared by all annexing jurisdictions. The individual jurisdictional annexes (identified in the individual annexes – chapters 5 through 24) were reviewed with the appropriate leadership and updated as needed.

Representatives from the County and the annexed jurisdictions were engaged in the process predominantly through remote, virtual communications due to COVID protocols. These were the leadership/representatives:

County Commissioner Tom Lannen
Sheriff Dave Brown
Leana Kinley, Administrator, City of Stevenson
Tom Jermann, Planner, City of North Bonneville
Chief Ann Lueders, Skamania Fire District #1
Chief Rob Farris, Skamania Fire District #2 / Stevenson Fire Department
Chief Ryan Kreps, Skamania Fire District #3
Chief Chris Fuller, Skamania Fire District #4
Chief Shane Cornish, Skamania Fire District #5
Chief Frank Yela, Skamania Fire District #6
Chief Neal Sacon, Mill A Fire Department
Chief Glen Bell, N. Bonneville Fire Department
Supt. Bob Rogers, Mill A School District
Supt. Ray Griffin, Mt. Pleasant School District

Supt. Ralph Pruitt, Skamania School District #2
Supt. Ingrid Colvard, Stevenson-Carson School District #303
Melissa Phillips, Exec. Sec., Home Valley Water District
David Wyatt, Manager, Stevenson Library
Doug Bill, Manager, Port of Skamania
John Goodman, Gen. Mgr., PUD #1
Lisa Nelson, Manager, Skamania Cemetery District
Supt. Ann Lueders, Skamania Hospital District #1
Randy Greeley, ACS Lead, Cowlitz County
Tamie Cody, Coordinator, Homeland Security Region 4
Larry Hembree, Emergency Mgt. Coordinator, Cowlitz Co.
Beau Renfro, Emergency Mgr., Wahkiakum Co.
Barbara Ayers, Emergency Mgr., Hood River Co. (OR)

Key changes in this most-recent revision include:

- Eliminating duplication and extraneous information
- Emphasis on regional context of natural hazards
- Inclusion of historical hazard occurrences as indictors of potential future disasters
- Incorporation of the Jurisdictions' annexes as part of the Plan

Public Participation and Consultation

Since all members of the community ("Whole Community" concept) are responsible for personal safety, safety of families, the protection of individual as well as communal assets and resources from natural disaster events, extensive outreach and virtual interfacing was conducted during the review of the former Plan as well as during the development/update of this Plan. While hampered by COVID-19 to conduct in-person open houses or workshops, much interaction was accomplished using electronic platforms, virtual communications channels and media to disseminate and obtain information critical to this Plan's update process. The local paper (Skamania County Pioneer) carried a news story about the update and listed links to the Department of Emergency Management (DEM) website for feedback and an on-line meeting with the editor and DEM was arranged. Also a public poll about hazards, disasters, preparedness, and mitigation was carried out using "Surveymonkey" as the platform. Additionally, virtual meetings have been held with annexing jurisdictions and key partners and stakeholders, such as local industry and other out-of-scope entities to keep them involved and engaged in the hazard mitigation planning process.
A calendar of conferences/meetings/engagements with the public as well as the Hazard Mitigation Plan (HMP) Planning Team can be found in Appendix A.

Continued Public Involvement

DEM and all entities (including the public) that participated in the review/update of this Plan are committed to continue this involvement and education. Natural hazards mitigation will be integrated into existing programs and be considered when making decisions about land use, facilities planning, and other actions that may increase or decrease vulnerabilities to natural hazards. DEM will lead the initiative to combine the natural Hazards Mitigation Plan elements into existing emergency preparedness activities and information in order to continue to educate the public on the importance of

managing the risk regarding natural hazards. Governmental entities will be encouraged to participate in that effort, especially those jurisdictions who annexed to the Plan. Any time new emergency preparedness public information pieces will be prepared - such as brochures - integration of natural hazards mitigation information will be strongly considered for inclusion. Copies of the Hazard Mitigation Plan will be maintained in the DEM Library and made available as a public document.

Adoption by County Jurisdictions

Upon State and FEMA approval of the Plan, each jurisdiction annexed to the Plan must have its governing body adopt the entire plan and their local jurisdiction's Annex. Each jurisdiction/entity will follow proper process in accordance with the laws or protocols/procedures of their organization, including adequate public notice and public hearings. The Adoption of the Plan by each jurisdiction signifies that organization's commitment to the mitigation goals and objectives identified in the Plan and its relevant Annex. The adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. Adoption/Promulgation information is included in this Plan as Appendix B.

Implementation

Each annexed jurisdiction will seek implementation of its identified mitigation initiatives based on the availability of funding and resources, as well as possibly varying priorities during the life-cycle of the Plan. This being a multi-jurisdictional plan, the mechanism for implementation via existing programs may vary between jurisdictions. Jurisdictions may incorporate mitigation measures into capital facility plans, thus identifying developments or improvements of infrastructure or facilities. Only the County has a Comprehensive Emergency Management Plan (CEMP), and when that CEMP is updated it will be linked back to the Hazard Mitigation Plan by references.

Plan Stewardship

This Hazard Mitigation Plan includes a number of committed jurisdictions in the County that have contributed to its creation and update, and they will continue to support the ongoing activities associated with the Plan. With their help, Skamania County's Department of Emergency Management (DEM) takes stewardship of this Plan, which includes sustaining its maintenance, viability, relevancy, and promotion among partners and stakeholders.

Plan Monitoring and Maintenance

Monitoring and maintaining any plan is an important and ongoing task and it is for this Plan as well. Information contained in the Plan must remain accurate and current. Only looking the Plan over every five years, when an updated version must be submitted to State/FEMA, is simply not enough and does disservice to the Plan's importance and its collaborative creators. Also, if a routine maintenance cycle is followed, the mandated five-year update will be that much easier to be accomplished.

Updates and changes to the Plan

These may occur as a consequence of the annual plan monitoring efforts, following an after-action analysis of significant events during a disaster, or based on significant changes in the needs of any of the annexed jurisdictions. While each individual jurisdiction maintains its own jurisdictional annex, DEM will be responsible to implement all revisions to the County-wide Chapters.

Minor Revisions

Minor spelling errors, grammatical and other mistakes will be corrected by DEM.

Technical Revisions

Changes that would alter the technical content of the general plan such as additions or deletions of data or alterations to the hazard profiles and the risk assessments will be the responsibility of DEM. Any changes of this type may also require a review by affected jurisdictions/entities, if applicable.

Substantive Revisions

If the State or FEMA request significant changes or analysis to the general plan, it will require a meeting and review by the HMP Planning Team. Substantive changes to the jurisdictional annexes will also require review and approval of the affected jurisdictions' governing/approving body. Substantive changes may possibly require a re-adoption of portions of the Plan depending on the complexity and scope of the changes.

Distribution of Revisions

Maintaining a master copy of the plan and distributing relevant updates to all adopted plan holders is the responsibility of DEM. If revisions are made to the general portion of the Plan, holders of the Plan will be notified and also receive supporting documentation which necessitated the revision. If revisions are made by a jurisdiction's annex to the Plan, the jurisdiction will provide DEM with a copy of the revision and the documentation of the process used. Plan updates and revisions will be distributed electronically. However, printed copies may be requested from DEM.

Annual Natural Hazard Mitigation Assessment

At least annually, the Plan will be reviewed with or by all partners and major stakeholders to include assessment of these items:

- Progress towards the Plan's goals and objectives
- Progress towards specific mitigation initiatives
- Project/initiatives implementation issues
- Funding opportunities and/or shortfalls
- Public interest and public involvement

As part of monitoring the Plan, DEM will track various grant programs and other funding opportunities that may help Plan participants with funding various mitigation projects and initiatives identified in the Plan.

Goals and objectives from this plan will be referenced when the County and partnering jurisdictions participate in projects or training required to maintain good standing in specific programs such as FEMA's ongoing update of the Flood Insurance Study and Digital Flood Insurance Rate Map (DFIRM). Maintaining a good standing with the National Flood Insurance Program (NFIP) is identified as a priority and thus, participating in mapping, trainings, and educational outreach processes to maintain that eligibility is vital.

Review after a Significant Disaster Event

Sixty to eighty days following a Federal Disaster Declaration or any significant emergency event that occurred within Skamania County, DEM will facilitate an after-action review (AAR) for the purpose of identifying any lessons learned and possibly develop an improvement plan (IP). Specifically, the AAR will assess:

- Characteristics, severity, and impact of the hazard – possibly necessitating a change in the County's risks assessment
- Direct, collateral, and indirect damage and associated costs of response and recovery
- Damage extent and damage type/kind – consideration to add new mitigation initiatives to the Plan to forego similar losses in such hazard events in the future

The information obtained in this AAR/IP process may be used right away to consider any modifications to existing initiatives or to add any new initiatives. Any such considerations may also be delayed until the next update cycle of the Plan.

Future Plan Updates

If a major update of the Plan is deemed necessary, DEM will facilitate that collaborative work program - including a budget and a timeframe for the update of the Plan. DEM will make notifications that the Plan is under review and engage the appropriate public process. New planning partners will be recruited and engaged in the updating process. Normally, the County's natural hazards mitigation plan must be updated every five years at a minimum.

County Accomplishment of past Mitigation Initiatives

The old Hazard Mitigation Plan approved in 2010 contained 51 mitigation projects to address natural hazards.

These mitigation projects were categorized in to Facilities & Infrastructure projects, Planning/Planning actions, Education projects, and Equipment/Training/Exercise initiatives.

Detailed information about accomplishment and/or status of these projects is summarized in Chapter 4 "Mitigation Goals, Objectives, and Initiatives."

Chapter 2. Skamania County Community Profile

Introduction

Looking at the composition of Skamania County's population, wealth, employment, land use, infrastructure, and government services will provide a context for natural hazards mitigation planning. This chapter includes general information about the region's natural setting, its demographics, growth trends, and public and private resources. Understanding all these factors and applying their exposure to the identified, applicable natural hazards will enable the development of strategies, the coordination of resources, and an increase in public awareness to reduce risk and prevent loss from future natural hazards.

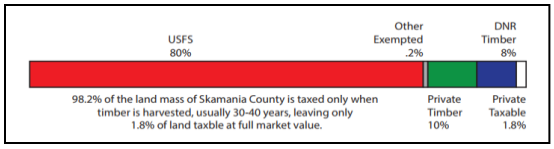
Based on past and forecasted continued (modest) growth of Skamania County, the risk associated with natural hazards may increase as population increases in areas affected by natural hazards. In this regard, it is important that government agencies develop strategies, coordinate resources, and emphasize public awareness and preparedness to reduce risk as well as prevent loss from natural hazards.

Geography and Topography

Skamania County is located in Southwest Washington bordered by Klickitat and Yakima County in the East, Lewis County in North, Cowlitz and Clark County in the West, and the Columbia River in the South. Skamania County measures 1,655 square miles and ranks 24th in size among Washington counties.

Located in Southwestern Washington, Skamania County offers the most scenic and diverse landscape in the area and extends from the northern shores of the Columbia River, through the forested ridges and ravines of the Cascade Mountains, north beyond Mount St. Helens and east to the flanks of Mt. Adams.

Ninety percent of the County is forested and 80% is part of the U.S. Forest Service's Gifford Pinchot National Forest. The fact that another 10% are private timberlands and 8% are under the Department of Natural Resources (DNR) jurisdiction adds to the tax revenue woes, because taxes are only collected when timber is harvested that happens usually every 30 to 40 years. That leaves only 1.8% privately-owned land taxable at the full market value.



The Columbia River Gorge offers exciting scenery, interesting geology, varied flora and fauna, thrilling recreational opportunities, and a rich human history. This area's significance has been recognized nationally through the creation of the National Scenic Area Act under President Ronald Reagan in 1986.

Population Trends

The population of Skamania County has grown by approximately 9% in the past nine years and is estimated to have reached 12,107 to date. This is about three percentage points less than in the previous decade (2000 to 2010) and half as much as the growth rate of 19.1% in the 1990's.

Skamania County Population Growth, 1960-2019							
	1960	1970	1980	1990	2000	2010	2020 (census)
Total	5,207	5,845	7,919	8,289	9,872	11,066	12,107
Change		638	2,074	370	1,583	1,194	1,041
Percent Change		12.3%	35.5%	4.7%	19.1%	12.1%	9.4%

The most recent population growth rates of approximately 1% per year will most likely remain the same over the next 10 years. If this holds true, Skamania County will be home to a population of about 12,600 in 2025 and about 13,300 in 2030. Almost all residents live in the southern quarter of the County along the Columbia River and in the Wind River Valley. The overall population density is around 7 persons per square mile.

Approximately 56% of the residents of Skamania County live in the unincorporated area, and 44% live in Stevenson, North Bonneville, and Carson.

Of the 12,107 Skamania County residents, 18% (approx. 2,100) are younger than 18 years old, 60% (approx. 7,200) are between 19 and 64 years old, and 22% (approx. 2,600) are over 65 years old.

Approximately 92.8% (11,200) of the residents are white, 6.8% (approx. 760) are Hispanic. The remaining 0.4% (approx. 50) residents have other race origins.

The 12,107 residents in Skamania County reside in 4,685 households with approximately 2.5 persons per household. Ninety-one percent of the residents are high school graduates and 24% have accomplished a Bachelor's or higher academic degree.

There are 5,990 owner-occupied housing units in Skamania County and the median value of these housing units is $ 282,400.

The median household income in Skamania County is approximately $ 58,600 and the average income per capita is about $ 30,200. Unfortunately, over 11% live in poverty.

22% of the County residents are over 65 years old and many of them also have a disability. An additional 10% are younger than 65 with disabilities. The disabled, the elderly, and the poor residents suffer most under disaster conditions and are of high concerns to emergency management and first responders. It is hard for these folks to properly prepare for, mitigate against, respond to, and thus recover from a disaster. Assisting these vulnerable residents and trying to meet their special needs is an important task not only during disaster response, but also as it regards preparedness and impact mitigation.

Special Needs Populations

Residents in Skamania County with special needs should be identified relative to where they live in potentially hazardous geographical areas. Because they will likely have special needs during times of emergencies and disasters, consideration should be given to these special needs:

- Communication needs (receiving notifications)
- Transportation needs (evacuation)
- Medical care requirements
- Supervision and special assistance needs
- Persons with disabilities who are:
  - Living in institutionalized settings
  - Elderly
  - Children
  - From diverse cultures
  - Limited English proficiency or are non-English speaking
  - Transportation disadvantaged
- Tourists, travelers

Functional needs are those which restrict or limit the ability to perform activities which would normally be considered routine.

Skamania County continues to engage with partners and stakeholders to address emerging issues when engaging with persons with special needs prior to, during, and following a disaster. The County will continue to monitor the locations of special needs populations in relation to potentially hazardous areas, and provide decision makers a range of policy options intended to minimize risk and exposure to natural hazards of the elderly, the disabled, the poor, and others with special needs.

Legal and Regulatory Capability

Skamania County Capability Assessment

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	N	N	Y	Skamania Co. Code: Title 15, Chapters 15.04.10 through 15.04.070
Zonings	Y				Skamania Co. Code: Title 21,

					Chapters 21.04 through 21.110
Subdivisions	Y				Skamania Co. Code: Title 17, Chapters 17.04 through 17.68
Stormwater Management	Y			N	Skamania Co. Code: Title 19, Chapters 19.01 through 19.07
Post Disaster Recovery	Y			N	Skamania Co. Comprehensive Emergency Management Plan
Real Estate Disclosure	Y			N	
Growth Management	Y			N	Skamania Co. Code: Title 19, Chapters 19.01 through 19.07
Site Plan Review	Y			N	Skamania Co. Code: Title 15, 15.04 Chapters through 15.33, and Title 8, 8.02 Chapters through 8.84
Special Purpose (flood management, critical areas)	Y				Skamania Co. Code: Title 19, Chapters 19.01 through 19.07
Planning Documents					
General or Comprehensive Plan	Y				Skamania Co. Comprehensive Plan 2007 - amended 2018
Floodplain or Basin Plan	Y			N	Skamania Co. Shoreline Master

					Program Update
Stormwater Plan	Y				Skamania Co. Code: Title 19, Chapters 19.01 through 19.07
Capital Improvement Plan	Y				Skamania Forward – Summary Report 2000
Habitat Conservation Plan	Y			Y	Skamania County Critical Areas Ordinance Update 2018
Economic Development Plan					
Emergency Response Plan	Y		Y	Y	Skamania Co. Comprehensive Emergency Management Plan
Shoreline Management Plan	Y			Y	Skamania Co. Shoreline Master Program Update
Post Disaster Recovery Plan	Y			Y	Skamania Co. Comprehensive Emergency Management Plan
Other					
Salmon Recovery Plan	Y				Lower Columbia Conservation & Sustainable Fisheries Plan

ADMINISTRATIVE AND TECHNICAL CAPABILITY

Staff/Personnel	Resources Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	y	1 County Administrator 1 Public Works Director … Consulting Engineer … Planner … Natural Resources manager
Engineers or professionals trained in building or infrastructure construction practices	Y	1 Public Works Director 2 Public Works Engineers … Consulting Engineers
Planners or engineers with an understanding of natural hazards	Y	1 Public Works Director 1 City Administrator Consulting Engineer Planner 1 Fire Chief
Staff with training in benefit/cost analysis	Y	1 County Administrator 1 Public Works Director
Floodplain manager	Y	Consulting City Engineer 1 Public Works Director
Surveyors	N	
Personnel skilled or trained in GIS applications	Y	GIS Technician
Scientist familiar with natural hazards and Climate Change in local area	N	
Emergency Manager	Y	1 Emergency Manager 1 Sheriff
Grant writers	Y	1 Public Works Director 1 City Administrator Consulting Engineer

FISCAL CAPABILITY

Financial Resources	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	City Yes, County No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Partner with neighboring jurisdictions or Tribe to utilize Floodplains by Design grant programs	Yes

Chapter 3. Hazard Definition, Context, and Risk Assessment

The purpose of this chapter is to identify as well as to define and further qualify the natural hazards present in Skamania County and potentially impacting life, property, environment, and the economy.

Updated in November 2019, the County's Hazard Identification and Vulnerability Analysis (HIVA) is the basis from which this Hazard Mitigation Plan is developed. The HIVA identified those hazards in the County which should be considered in preparedness, mitigation, protection, response, and recovery activities.

In meetings with individuals from Skamania County jurisdictions, agencies, organizations, subject matter experts, and the public, eight natural hazards were identified as those having potential impact on life, property, and the environment in Skamania County. Participants in those meetings were also asked to rank each hazard as to its probability of occurring in the next 25 years, our County's vulnerability (exposure) related to this hazard, and the subjective estimate of risk being a combination of probability and vulnerability. Participants had three parameters for each of the eight natural hazards to assign: Probability, Vulnerability, and Risk.

The "Probability" (of occurrence) refers to the likelihood - great, medium, or little - of a hazardous event to occur within the next 25 years. In the table on page 20 these parameters are translated into "High," "Moderate," and "Low."

"Vulnerability" describes the potential exposure and impact a hazardous event could have on Skamania County's vital elements, i.e., population, property, commerce, infrastructure, and services. A rating of "High" would mean that all the County's elements are greatly impacted, even to catastrophic levels. A rating of "Moderate" would indicate that not all County elements are impacted, or all are impacted to varying degrees, and a disaster may be medium or major, but not catastrophic. The rating of "Low" would mean that a limited area or only parts of population, property, commerce, infrastructure, and services are exposed to the hazards, and at worst, such as disaster would be of minor or medium proportions.

"Risk" - quantified as high, moderate, or low - subjectively estimates the combination of a hazard's probability of occurrence and the County's vulnerability.

- *High Risk* (75% – 100%) represents a high probability associated with a high or moderate vulnerability, or a moderate probability combined with a high vulnerability.
- *Moderate Risk* (25% – 75%) represents high probability with low vulnerability, or a moderate probability with moderate vulnerability, or low probability with high vulnerability.
- *Low Risk* (<25%) represents a moderate probability with low vulnerability or low probability with moderate or low vulnerability. These risk rankings are visualized in the table below:

Probability				
Vulnerability		High	Moderate	Low
	High	**High** Risk	**High** Risk	**Moderate** Risk
	Moderate	**High** Risk	**Moderate** Risk	**Low** Risk
	Low	**Moderate** Risk	**Low** Risk	**Low** Risk

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The eight natural hazards identified and to be addressed for Skamania County are:

- Wildfire
- Earthquake
- Severe Storm
- Landslide
- Flooding
- Drought
- Volcano
- Avalanche

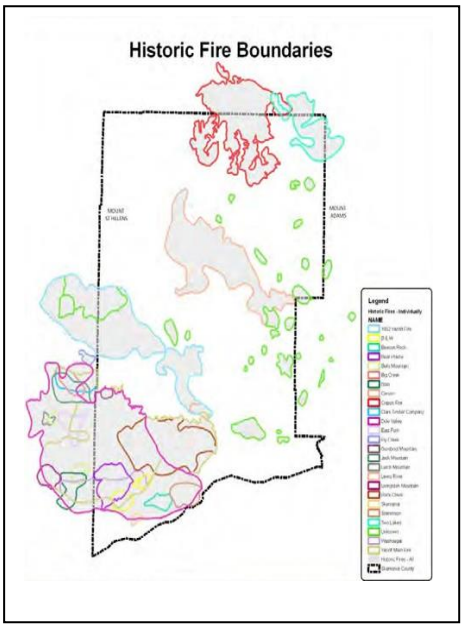
Based on the feedback from participants in meetings and other communications, a "Hazard Analysis Summary" was established reflecting Probability of Occurrence, Vulnerability, and Risk for each identified natural hazard. The summary of the individual results are presented in this table.

Hazard	Probability	Vulnerability	Risk Rating
Wildfire	High	High	High
Earthquake	High	High	High
Severe Storm	High	High	High
Landslide	High	High	High
Flood	Moderate	Low	Low
Drought	High	Moderate	Moderate
Volcano	Low	Moderate	Low
Avalanche	Low	Low	Low

Wildfire

Definition

A wildfire is any outdoor fire that is not controlled, supervised, or arranged. Wildfire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Wildfires can result in widespread property damage and loss of life.



More Information:
https://www.ready.gov/wildfires

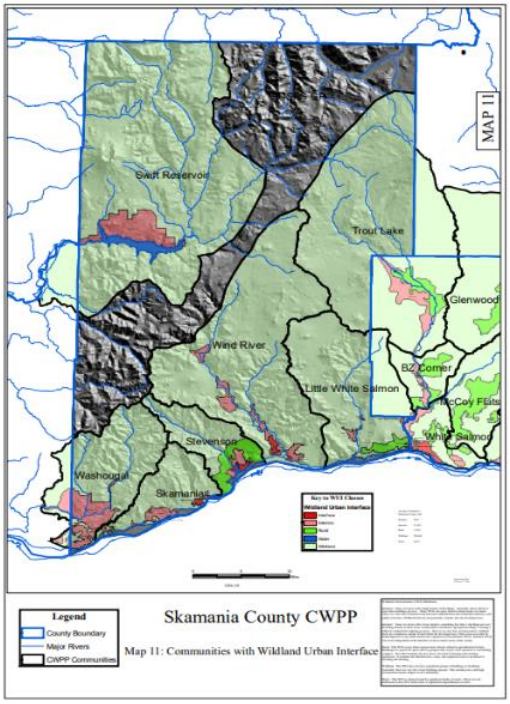
Regional Context

Skamania County's fire season typically runs from mid-May through October. However, any prolonged period of lack of precipitation presents a potentially dangerous problem.

Skamania County and WSU Extension completed community wildfire protection plans (CWPPs) in 2007 and 2008 for all areas where people live in Skamania County. According to local fire districts/departments, this CWPP is still applicable and accurate.

The county was divided into the following seven areas where wildfire hazards exist:

Beacon Rock - The Beacon Rock CWPP area is located in southwest Skamania County. The CWPP planning area includes the city of North Bonneville, and many small communities served by Skamania County FD #5. Beacon Rock State Park is located within the CWPP area as are a number of popular recreation destinations in the Gifford Pinchot National Forest.



Greater Stevenson - The Greater Stevenson CWPP area is located in south central Skamania County. The CWPP area includes the city of Stevenson, the county seat. The Greater Stevenson CWPP area is served by Skamania County FD #2 and Stevenson Fire Department.

Greater Wind River - The GWR planning area encompasses 3 unincorporated communities: Carson, Home Valley and Hemlock/Stabler. Hemlock/Stabler is located along Wind River Highway, approximately 8 miles north of SR14. Carson is located 1 mile north of Highway SR14 on Wind River Highway. Home Valley is located on SR14 mile post 50.

Little White Salmon Drainage - The Little White Salmon Drainage is located in the southeast corner of Skamania County. One of two southern access routes to the Gifford Pinchot National forest passes through the Little White Salmon Drainage planning area.

Swift Reservoir- The Swift CWPP area is located in the northwest corner of Skamania County. Communities reside in the southern half of the Swift CWPP area and are located on the north side of Swift Reservoir from the Cowlitz County border to the northeast side of the reservoir. Mount St. Helens National Volcanic Monument is located in the northwestern section within the Swift CWPP planning area. The 1982 established Monument covers 110,000 acres following the May 18, 1980 eruption (Witherspoon 2007). State lands are located in the southwest section of the planning area and cover over 121,000 acres.

Underwood - Underwood is located in the southeast corner of Skamania County on the north shore of the Columbia River.

West End - Within the CWPP planning area, the Skamania County "West End Community Comprehensive Subarea Plan" designates the West End Community to the lands located within Township 1 North, Range 5 East; Township 2 North, Range 5 East; Township 3 North, Range 5 East; Township 1 North, Range 6 East; Township 2 North, Range 6 East; Township 3 North, Range 6 East, Willamette Meridian, lying north of the CRGNSA boundary and south of the GPNF boundary (Witherspoon 2007).
Although a CWPP was not developed for the part of the county where no one resides, it should be noted this part of the county is most definitely an area where wildfire hazards exist.

Critical Facilities and Infrastructure in the Hazard Area

Aside from homes, buildings, and other private or public structures, critical infrastructure and key assets include power lines, pipelines, and rail and road transportation routes. A list of specific locations of these critical facilities are available with the Skamania County Department of Emergency Management.

Summary Assessment

Probability of Future Events:

Wildfires in Skamania County and close areas of neighboring counties are frequent during summer months, but recently it seems the wildfire season starts earlier and lasts longer. The probability of wildfires occurring or affecting the County, based on recent history, is considered **high**.

Overall Vulnerability to Hazard:

While the adoption of International Building Code and County Fire Code assists in curtailing fire damage to homes, buildings, forests, and other property, the vulnerability to wildfire is still **high**.

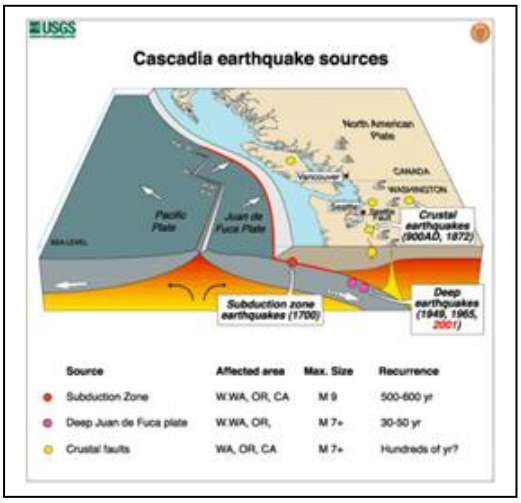
Risk:

Together with the high probability of occurrence, this high level of impact and vulnerability yields a **high**-risk ranking.

Earthquake

Definition

Earthquakes are sudden releases of energy creating movement in the earth's crust. Most earthquake-related deaths and property damage are caused by the failure and collapse of structures due to ground shaking. The level of loss and damage depends upon the extent and duration of the shaking. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (in mountain regions and along hillsides), and liquefaction.



Shallow or crustal quakes, occurring at a depth of 5 to 10 miles beneath the earth's surface, are associated with fault movement within a surface plate.

Intra-plate or "deep" earthquakes occur when an earthquake on a geologic plate affects another plate. In Pacific Northwest geology, intra-plate quakes happen when the Juan de Fuca plate breaks up underneath the continental plate, approximately 30 miles beneath the earth's surface.

Subduction Zone earthquakes are the result of two converging plates becoming stuck along their interface. Continued movements between the plates will build up energy across the locked surface until the plates abruptly slip along the interface when the strain is released.

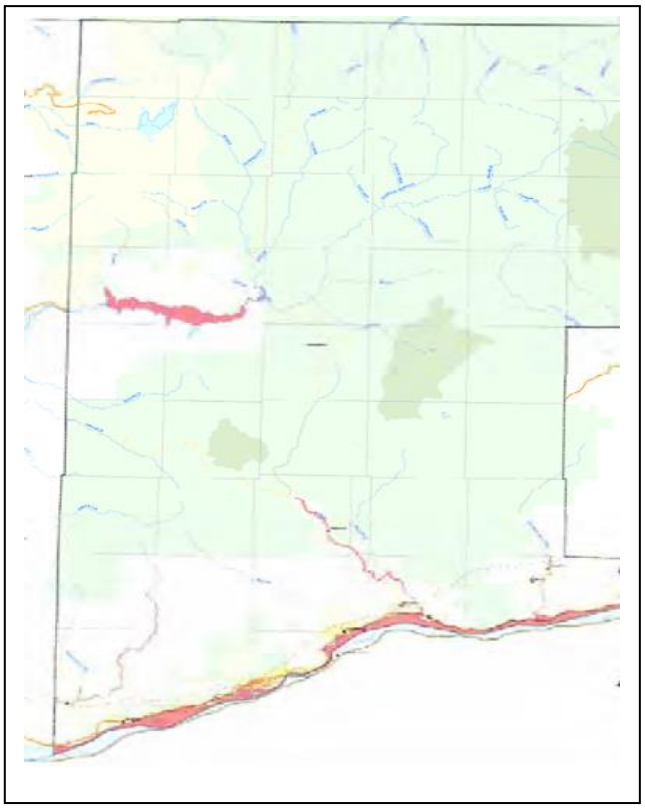
More Information:
https://www.usgs.gov/natural-hazards/earthquake-hazards/earthquakes
https://www.ready.gov/earthquakes

Regional Context

Of all the natural hazards that affect the region, earthquakes cause the most widespread damage to infrastructure and disrupt services and essential operations across all sectors of society. The Pacific Northwest is seismically a very active area and Washington State experiences more than 1,000 earthquakes a year. But the majority of these events pass without being noticed. Potential earthquake sources in Skamania County are not very well known because there have been few large earthquakes. But earthquakes in Skamania County would most likely originate from three sources:

- the Mount St. Helens Seismic Zone;
- the Portland/Vancouver Seismic Zone, and
- the Cascadia Subduction Zone.

Of these, the Portland/Vancouver Seismic Zone is the least understood. There is better and more detailed information about the Mount St. Helens Seismic Zone, because of the intense scrutiny of Mount St. Helens. And as far as the Cascadia Subduction Zone (CSZ) is concerned - based on the publicity, research, and numerous studies - information and understanding about a CSZ earthquake have dramatically increased over the last 10 years.



The **Mount St. Helens Seismic Zone** is the most common source of numbers of small earthquakes (<4 Richter magnitude). The strongest earthquake associated in this zone was the Elk Lake earthquake in 1981 at circa 5.5 magnitude. There was light damage to structural materials and moderate damage to non- structural items in the area near the epicenter. The fault associated with the Mount St. Helens seismic area with a length of 70km is fairly long and geologists suggest that earthquakes with 6.5 magnitude are possible along such long faults.

The **Portland/Vancouver Seismic Zone –** Historically, the Portland metropolitan area and Southwest Washington are seismically very active and have had several earthquakes of magnitudes (M) 5 or greater in the past 150 years. The area between the Lacamas Creek Fault and the Portland Hills Fault borders this seismic region. Geophysical studies suggest that earthquakes as large as M 6 or larger are likely to occur in this region every 300-350 years, and an event of M 6.5 or larger about every 800-900 years. This would represent the worst-case scenario for Skamania County, because the epicenters may be close enough to cause damage. Geologists theorize there may be faults directly underneath the cities of Portland and Vancouver. Recent studies suggest that the epicenter for the M 5.5 earthquake in November 1962 was located underneath the City of Vancouver.

Cascadia Subduction Zone - The Cascadia Subduction Zone lies about 50 miles offshore, extending from near Vancouver Island to northern California. The zone is where the oceanic Juan de Fuca plate dives beneath the continental North American plate. These plates are converging at a rate of 1 – 1.5 inches per year.

Previous occurrences:

Type of Earthquake	Date	Location	Impact
Subduction Zone	1700	Coast of WA, OR, CA, and BC	9.0 Magnitude Earthquake
Shallow	1872	Seattle, North Cascades	7.4 Magnitude Earthquake
Deep	1949	Olympia, Seattle and Tacoma	7.1 Magnitude Earthquake, 8 deaths, damage estimate $25 million (1949 dollars)
Deep	1965	Seattle and Tacoma	6.7 Magnitude Earthquake, 7 deaths, damage estimate $12 million (1965 dollars)
Mount St. Helens	1980	½ mile NNE of Mount St. Helens	5.7 Magnitude Earthquake, 57 deaths, damage estimate $1 billion
Shallow	1993	Willamette Valley, Oregon	5.6 Magnitude Earthquake, damage estimate $28 million (1993 dollars)
Shallow	1993	Klamath Falls, Oregon	6.0 and 5.9 Magnitude Earthquakes, 2 deaths, damage estimate $10 million (1993 dollars)
Mount St. Helens	1998	19 mi SSE of Mount St. Helens	3.1 Magnitude Earthquake
Deep	2001	Nisqually, 10 miles NE of Olympia	6.8 Magnitude Earthquake, 1 death, >700 people injured, damage between $ 1 and 4 billion

The shallow earthquake in the North Cascades in 1872 was the largest in the history of Washington and Oregon. It had an estimated magnitude of 7.4 and was followed by many aftershocks. In 1993, a magnitude 5.6 earthquake in the Willamette Valley of Oregon caused $28 million in damages, including damage to the Oregon State Capital in Salem. A pair of earthquakes near Klamath Falls, Oregon of magnitude 5.9 and 6.0, caused two fatalities and $10 million in damage. Some seismologists believe that large shallow quakes in the Pacific Northwest occur about once every 50 years

Deep earthquakes: In 1965, an M 6.5 earthquake occurred in the Seattle and Tacoma area, and in 1949, an M 7.1 earthquake occurred in Olympia. Each of these earthquakes caused significant damage. Other deep earthquakes occurred in 1882,

1909, and 1939. As with large shallow earthquakes, large deep earthquakes are believed to occur about once every 50 years.

A Northwest subduction zone earthquake has not occurred locally since the 1700's. However, similar subduction zones worldwide have produced earthquakes of magnitudes in excess of M 8. One such example is the M 9.2 Alaska earthquake in 1964. Geologic evidence indicates that the Cascadia Subduction Zone has generated great earthquakes at roughly 500 year intervals, most recently about 300 years ago. Researchers estimate there is a 10% chance of a local subduction zone earthquake within the next 200 years.

Critical Facilities and Infrastructure in the Hazard Area

Traffic infrastructure, especially SR 14, the Wind River Highway, but also other roads provide vital transportation for the communities – this includes bridges and overpasses.
Railroad tracks carry freight and passenger trains along the Columbia River and SR 14.
Olympic Pipeline running east to west through the County transporting fuel/energy products.
Power and communication lines essential for the community's energy supply and connectivity.

Summary Assessment

Probability of Future Events:

The Pacific Northwest Seismograph Network records approximately 1,000 earthquakes with M 1.0 or greater in Washington and Oregon. Of these, approximately two dozen are large enough to be felt. Almost all of the quakes are shallow earthquakes less than M 3.0. The probability of future occurrence for earthquakes similar to the 1965 M 6.5 Seattle-Tacoma event and the 2001 M 6.8 Nisqually event is once every 35 years on the average. The approximate recurrence rate for earthquakes similar to the 1949 M 7.1 Olympia earthquake is once every 110 years. Since it seems that we are slowly approaching the critical period of a recurrence, it was felt that Probability is **High**.

Overall Vulnerability to Hazard:

All of Skamania County's population, property, commerce, infrastructure and services are vulnerable to an earthquake. The scope of damage is a function of the earthquake's magnitude and to an extent determined by the level of preparedness of the affected communities. Damage could range from minimal to extreme loss of life and destruction of property. Most injury, death, and property damage in an earthquake result from seismic impacts on structural and non-structural materials. The vulnerability of certain areas partially depends on the types of structures in that area. A wood frame residential structure that is adequately secured to the foundation is relatively safe. An un-reinforced masonry building is at greatest risk from seismic impacts. Most injuries in earthquakes result from non-structural materials such as light fixtures, equipment, and furniture falling on people. Another factor in earthquake vulnerability is soil type. Water-saturated loose sand and silt loses its ability to support structures in an earthquake. Vulnerability to earthquakes in Skamania County is **high**.

Risk:

Within the limits of predictability, a *high probability of occurrence* for a damaging earthquake during the next 25 years is indicated. A large earthquake could have catastrophic impact on Skamania County and thus suggests *high vulnerability*. Accordingly, a **high** risk rating is assigned.

Severe Storm

Definition

Severe storms can include hazardous conditions produced by ice/freezing-rain/snow storms, high-velocity windstorms, and thunderstorms including heavy rain and hail, causing riverine flooding and flash flooding.

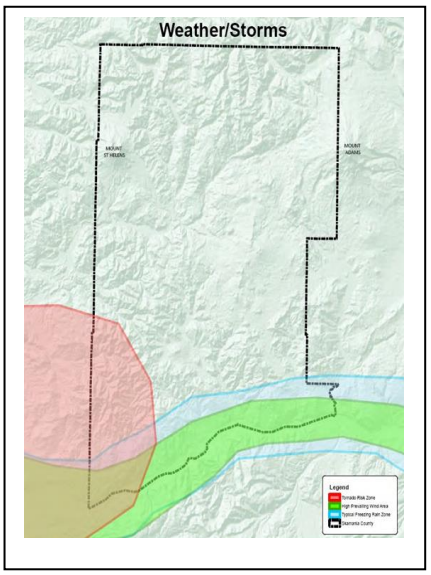
More Information:
https://www.ready.gov/severe-weather

Regional Context

Skamania County has experienced a multitude of severe storm hazards. Especially ice, snow and wind storms have the ability to severely impact the County and its residents. Strong local storms seldom cause death and serious property damage, but they can cause major utility and transportation disruptions.

Ice Storms or freezing rain (black ice) frequently occur in Skamania County during the winter months. This occurs when rain falls from warm and moist upper layers of the atmosphere into a cold, dry layer near the ground. The rain then freezes on contact with the cold ground and ice accumulates on exposed surfaces. This can create ice accumulation on tree branches, power and telecom lines, and other objects, thus increasing the weight and potentially breaking or collapsing the branch, line, or some structures. Ice accumulation on the roadway can have a severe impact on transportation and travel. Power outages and interruptions in electronic communications are also high-impact consequences of ice storms.

Snow Storms or Blizzards can produce significant snowfall in Skamania County. Accumulations in Skamania County vary depending on geographic location. More than 100 inches of snow may accumulate in some areas of the Gifford Pinchot National Forest around the higher elevations south of Mount St. Helens. In the area north of Stevenson and Carson, occasional snowfall may accumulate anywhere between 10 to 48 inches. January is usually the month with the greatest snowfall, and as the terrain and elevation increases north of the Columbia River, so does the amount of snow accumulating on the ground. Depending on the rate and total accumulation of snow, impact on traffic and power/communications lines must be anticipated.



Wind Storms of varying degrees frequently impact Skamania County. In the past, peak wind gusts in excess of 100 mph were measured at exposed locations. The strongest (sustained high-velocity) winds impacting Skamania County have two origins. One source are strong storms moving inland from the Pacific Ocean and potentially causing frequent and widespread strong winds in Skamania County. The other source is a high atmospheric pressure system over the Columbia River Basin in Central Washington and a low pressure system in the West off the Pacific Coast. This pressure differential causes a strong airflow over the Cascades and the foothills, but especially through the Columbia River Gorge which acts as a venturi-like funnel speeding up the airflow tremendously and lowering temperatures.

Critical Facilities and Infrastructure in the Hazard Area

Traffic infrastructure, especially SR 14, the Wind River Highway, and other roads and routes.
Railroad tracks carrying freight and passenger training along the Columbia River and SR 14.
Power and communication lines essential for the community's energy supply and connectivity.

Summary Assessment

Probability of Future Events:

In the past 50 years, 14 of the 16 (almost 90%) of Federal Disaster Declarations for Skamania County were due to severe ice, snow, rain or wind storms consequently contributing to landslides and flooding. These 14 disasters all occurred between the months of November and February. It is also an interesting question to ask whether or not climate change could be the reason that the (average) frequency of severe storm events in Skamania County recently has increased significantly (10 Federal disaster declarations since 2000, versus only 5 declarations between 1964 and 1999). Based on this history, it was decided that the probability of occurrence is **high**.

Overall Vulnerability to Hazard:

The entire County is vulnerable to the effects of severe storms. High-velocity winds cause widespread damage to trees and power lines that interrupt transportation, communications, and power distribution. Prolonged heavy rains cause the ground to become saturated, the rivers and streams rise, and local flooding and landslides are the potential result. Ice storms and freezing rain conditions may damage trees, structures, and powerlines. Icy roadways cause accidents and transportation problems, trees and branches may break and interrupt power and communication lines.

Snowstorms primarily impact the transportation system and the availability or timely response of public safety services. Heavy, wet snow and/or ice accumulating on roofs may cause those to collapse. Snow accompanied by high winds is a blizzard, which can affect visibility, cause large drifts and isolate residents for up to several days. Melting snow adds to river loading and can turn an otherwise benign situation into a local disaster.

Each of these types of storms, when in combination with any other type, or if accompanied by freezing temperatures, can exacerbate a storm's impact. Isolated residents without power are more likely to use wood fires to stay warm or to cook, potentially resulting in an increase in the number of structural fires. Residents without food or water may attempt to use impassable roads and thereby increase the number of rescue operations.

The effects can vary with the intensity and duration of the storm, the level of preparation of local jurisdictions and residents, and the equipment and staff available to perform necessary tasks to lessen the effects of severe local storms. Vulnerability and impact of severe storms is **high**.

Risk:

Based on past history showing high probability of severe storm events to occur and high vulnerability to such events, the rating for severe storms in Skamania is **high**.

Landslide

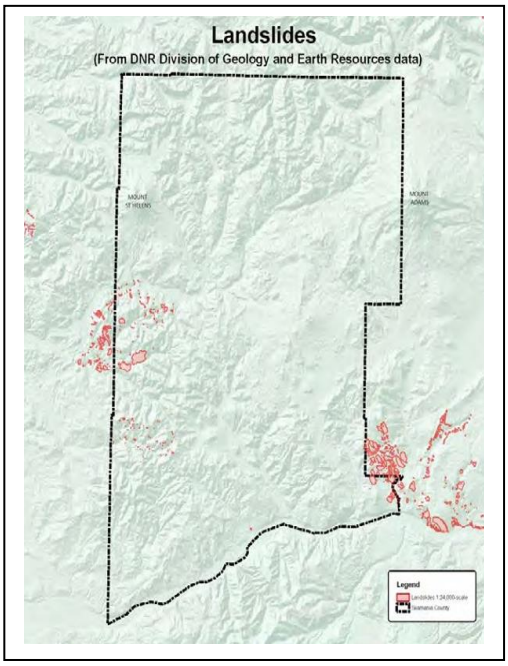
Definition

Landslides can be caused by many factors including earthquakes, storms, volcanic eruptions, fire and human modification of land. They occur when the slope or soil stability changes from stable to unstable. The most-deadly landslides are the ones that occur quickly, often with little notice. In a landslide, masses of rock, earth or debris move down a slope. Debris and mud flows are rivers of rock, earth and other debris saturated with water. They develop during intense rainfall, runoff, or rapid snowmelt, changing the earth into a flowing river of mud or "slurry." They can flow rapidly, striking with little or no warning at avalanche speeds (faster than a person can run). They also can travel many miles from their source, growing in size as they pick up trees, boulders, cars and other materials. Debris flows don't always stay in stream channels and they can flow sideways as well as downhill.

When a wildfire burns a slope, it increases the chance of debris flows for several years. Although some landslides require lengthy rain and saturated slopes, a debris flow can start on a dry slope after only a few minutes of intense rain (burst of rain at a fast rate). With debris flows, the rate matters more than total rainfall. If vegetation cover is low or absent (possibly the result of wildfires), or if the soil's water content is high, slopes are more likely to fail.

More Information:
https://www.ready.gov/landslides-debris-flow

Regional Context



Skamania County landslides usually occur during or after periods of heavy rain and flooding.

The severe weather and flooding experienced in Skamania County between December 1996 and February 1997 was the cause for a number of landslides. The most recent landslide in the County continued over many months along Rock Creek in 2008.

Skamania County has several areas where landslides have occurred and several areas that are susceptible to landslides. The slopes north and east of Washougal are particularly susceptible.

Slides in Skamania County could generally range in size from thin masses of soil of a few yards wide to deep-seated bedrock slides more than six miles across.

Travel rate may range in velocity from a few inches per month to many feet per second, depending largely on slope, material, and water content. The recognition of ancient dormant slide masses is important as they can be reactivated by earthquakes or unusually wet winters. Also, because they consist of broken materials and disrupted ground water, they are more susceptible to construction-triggered sliding than adjacent undisturbed material.

Major previous occurrences:

Hazard	Date	Location	Impact
Landslide	May 18, 1980	Mount St. Helens, 5.1 Magnitude Earthquake triggered an estimated 3.7 billion cubic yard Landslide	Extensive damage. Destroyed all buildings near Spirit Lake, and destroyed more than 200 homes and cabins
Landslide	February 1996	Near Stevenson, a reactivated landslide complex	Removed three homes from their foundations
Landslide	November 2006, DR 1671	Near and in Stevenson	Piper Road landslide and debris removal

Critical Facilities and Infrastructure in the Hazard Area

Traffic infrastructure, especially SR 14, the Wind River Highway, but also other roads provide vital transportation for the communities. Furthermore, they impact the railroad tracks running along the Columbia River and SR 14.

Slides in the vicinity of the Olympic Pipeline running east to west through the County may impact the conveyance of product at best, or if leaking, may become a threat to the community at worst. Landslides may damage power and communication lines which represent vital resources for the community.

Summary Assessment

Probability of Future Events:

Skamania County has a history of large and small landslides usually triggered by the frequently occurring severe weather events. Therefore, a **high** probability of occurrence has been assigned.

Overall Vulnerability to Hazard:

Due to the criticality of the County's traffic infrastructure, the dependence on continuous power and communications transmission capabilities, vulnerability was assessed as **high.**

Risk:

Because of the high probability of occurrence and the potential vulnerability and impact on the community, a **high** risk rating is assigned.

Flood

Definition

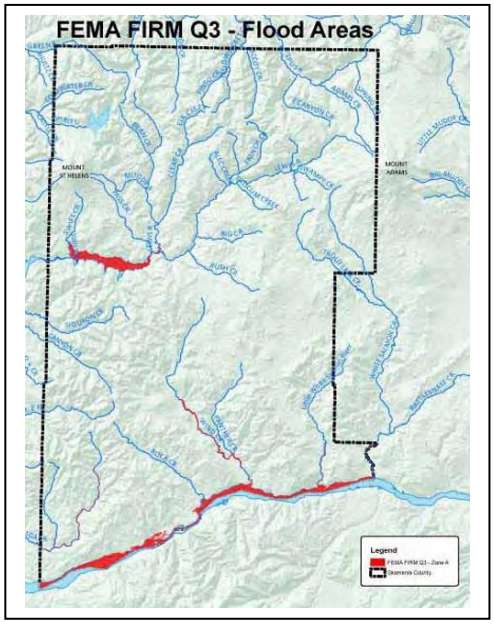
A flood is the partial or complete inundation of normally dry land. Various types of flooding include riverine flooding, coastal flooding, and shallow flooding. Common impacts of flooding include damage to personal property, buildings, and infrastructure, bridge and road closures, service disruptions, and injuries or even fatalities.

More Information:
https://www.ready.gov/floods

Regional Context

Flooding is a very common occurrence in Skamania County. In fact, 12 out of the 16 Federally-declared disasters in the past 55 years had a significant flooding component. Aside from severe weather events, the cause for flooding is mainly the moist air masses moving over the region in the winter. Some of the more serious flooding events are extensive wet conditions that follow a period of elevated temperatures at mid and high elevation causing rapid ice and snow pack melting. Annual precipitation in the County can range from approximately 56 inches in the area of the Washougal River and Cape Horn to over 90 inches in the mountainous northeastern sector.

Both riverine and flash floods can occur in Skamania County. Riverine floods – the most common type of floods in the County - happen when the amount of water flowing through a river channel exceeds the capacity of that channel. Flash flooding usually occurs in steep, sloping valleys and in small waterways during sudden rainstorms when large amounts of rain falls in a very short period of time. Urban flooding and storm water floods can occur when runoff from rainfall accumulates in developed areas with low drainage capacity, and low-lying areas. Poor drainage, elevated groundwater levels, and ponding are all symptoms of storm water flooding that can cause property damage. As development increases, storm water flooding may become an increasing concern. However, development is not the only reason, because natural soil conditions and geological features often determine drainage patterns that could lead to this type of flooding.



Fortunately, advances in weather forecasting technology are resulting in more accurate flood forecasts that can serve to provide communities with advance warnings. Radio broadcasts, television, and other emergency communications tools can provide the affected community with critical information to take necessary precautions, safeguard belongings and evacuate to safer ground. Fast rising flood waters can also eliminate the opportunity to provide for the safety of domestic animals.

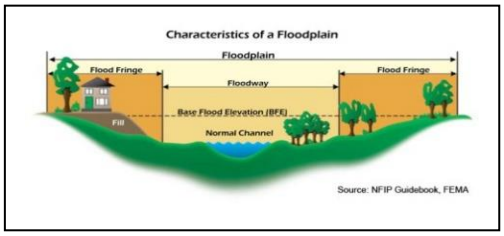
Skamania County follows the three levels of flood severity as publicized by the National Weather Service (NWS):

1. Minor flooding: A river exceeds bank-full conditions at one or more locations, generally flooding fields and forests. Some roads may be covered but passable. There may be enhanced erosion of some riverbanks.
2. Moderate flooding: Individual residential structures are threatened, and evacuation is recommended for selected properties. Some roads may be closed. Moderate damage may be experienced.
3. Major flooding: Neighborhoods and communities are threatened, and evacuation is recommended for residents living on specified streets, in specified communities or neighborhoods, or along specified stretches of river. Major thoroughfares may be closed and major damage is expected with major flooding.

Skamania County participates in the National Flood Insurance Program (NFIP) and has developed local ordinances to regulate and direct development in flood plain areas. A number of local ordinances regulate planning, construction, operation, and maintenance of any structures, and improvements, private or public (e.g., Skamania County Code, Titles 15, 17, 19, 21 - listed in Chapter 2 "Community Profile). These ordinances make certain that these developments are properly planned, constructed, operated, and maintained, in order to avert adverse effects on the regimen of a stream or another body of water, or the security of life, health, and property.

Flood hazard areas are those areas that are at risk of being inundated by a 100-year flood or, more specifically, subject to a one percent or greater chance of flooding in any given year. These areas include, but are not limited to streams, rivers, creeks, lakes, and wetlands. Floods adjacent to these bodies of water can cause great damage to human life, as well as to private and public property. In order to minimize and prevent these adverse impacts from occurring, it is imperative that appropriate regulations are established and enforced.

Skamania County currently reviews all proposed development to determine whether it would occur within the 100-year floodplain of any river or stream. The review is based on the Flood Insurance Rate Maps (FIRM) created by the Federal Emergency Management Agency (FEMA). Title 15 of the Skamania County Code establishes the requirements for any structures located within the 100-year floodplain, that they are consistent with the International Building Code and meet the requirements of best available science. Together with properly issued Flood Elevation Certificates, these protocols ensure that a proposed structure is elevated to an appropriate level above the floodplain.



It is unfortunate that many residents living in flood plain areas do not carry flood insurance, since they face a far greater risk to sustain damage to their home from a flood impact (26% chance in a 100-year flood event) than from fire (1%) during a 30-year mortgage period. Adding to this vulnerability are increases in the number and percentage of households located in flood plains.

The County's growth and development increases the need to develop land that may be more marginal, and as the density of development increases and permeable natural surfaces are replaced with homes and roads, the volume of storm water runoff and the area over which it floods will increase. As a result, there may be a number of homes which were once outside mapped flood plains that are now facing a higher threat of flooding. A good percentage of the National Flood Insurance claims could be originating from outside the mapped flood plains.

National Flood Insurance Program Participants				
Community	Number of Policies	Amount of Coverage	Total Losses	Floodplain Management Ordinance
Skamania County (includes incorporated cities/towns)	71	$ 19,500,000	$ 57,000	Skamania County Code, Title 19 Sec 19.01 though 19.07

Repetitive Loss Properties

FEMA defines a repetitive loss property as, "… those [properties] for which two or more losses of at least $1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978." A property is defined as a "severe repetitive loss property" when it meets one of these conditions:

1. Four or more separate flood claim payments have been made and each claim payment exceeds $5,000; or
2. At least two flood claim payments have been made and the cumulative payments exceed the value of the property.

According to FEMA's repetitive loss and severe repetitive loss information (RL/SRL), Skamania County has one single repetitive loss property listed, a residential structure.

Repetitive Loss Properties by Jurisdiction		
Jurisdiction	Number of Losses	Total Amount Paid
Skamania County, Unincorporated	0	$ 0
Stevenson	1	$ 57,000
North Bonneville	0	$ 0

Flood plains are regulated by Skamania County's critical areas ordinance and building code. All areas within the one-hundred-year floodplain as designated by the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP) and shown on the flood insurance rate map (FIRM) panels are considered critical areas and designated as "frequently flooded areas". These areas are also subject to the construction requirements in Washington Administrative Code Chapter 173-158 (Flood Plain Management) and Chapter 15.18 of the Skamania County Building Code (Flood Damage Prevention). All development within frequently flooded areas must obtain a building permit and are reviewed for compliance with the specific standards in the County's building code to prevent flood damage. For example, new construction and substantial improvement of any residential structure is required to have the lowest floor, including basement, elevated to or above the base flood elevation.

Critical Facilities and Infrastructure in the Hazard Area

Traffic infrastructure, especially SR 14, the Wind River Highway, but also other roads provide vital transportation for the communities – this includes bridges and overpasses.
Railroad tracks carrying freight and passenger training along the Columbia River and SR 14.
Power and communication lines essential for the community's energy supply and connectivity.

Summary Assessment

Probability of Future Events:

Most flooding occurring in – mostly well-drained - Skamania County is riverine and shallow flooding at a minor or moderate level. Long periods of heavy rainfall and mild temperatures, coupled with snowmelt during the winter, can contribute to flooding conditions. The level of the Columbia River is tightly controlled by the releases at the Bonneville Dam (U.S. Army Corps of Engineers) and minimizes exposure to flooding from that river. The Washougal River on the west end of the County usually floods in a minor or moderate fashion due to severe weather events between October and February. Based on past flooding history, the probability of major flooding event has been determined as **Moderate** for Skamania County.

Overall Vulnerability to Hazard:

Because of the land area and potentially affected population - relative to the total area and population of Skamania County – as well as the County's efforts and regulations managing land and building development, the assessment of vulnerability is **Low**.

Risk:

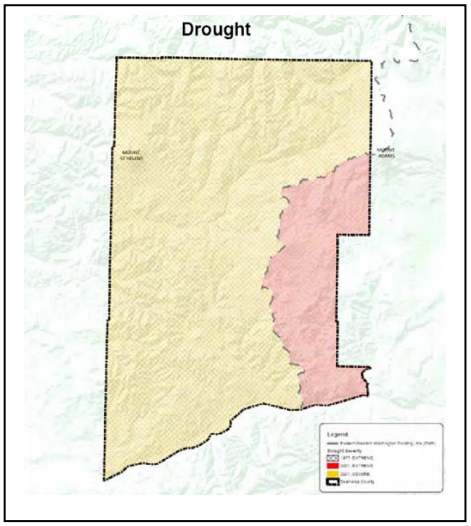
Due to a moderate probability of a major flood occurring and the assessed vulnerability being low, the risk for flooding events is determined as **Low**.

Drought

Definition

Drought is a condition of climatic dryness severe enough to reduce soil moisture and water below the minimum necessary for sustaining plant, animal, and human life systems. It means that the water supply for a geographical area, or for a significant portion of a geographical area, is below seventy-five percent of normal and the water shortage is likely to create undue hardships for various water uses and users.

More Information:
https://www.ready.gov/drought



Regional Context

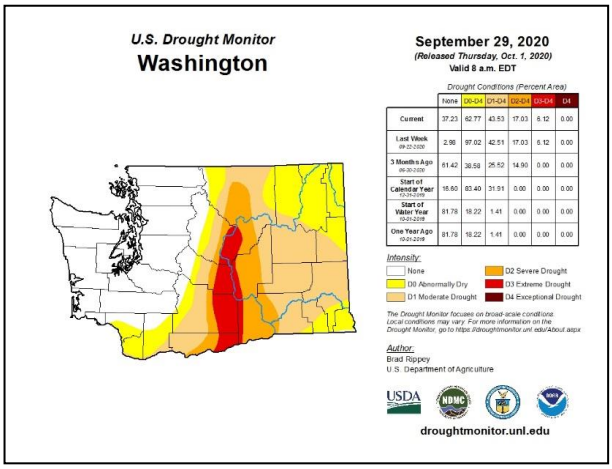
Nearly all of Skamania County may be vulnerable to drought. While actual drought conditions may only have lasted several days even during extended dry weather periods, the fact that global warming challenges are reflected in some of NOAA's climatic data sets may indicate more severe conditions of hot and dry weather in the future. Thus, exposure to drought could probably become more significant for Skamania County. Together with past and current forest management policies and protocols, global warming may be the second contributor to devastating wildfires in recent years.

Summary Assessment

Although the entire population of the county is vulnerable to the effects of drought, agriculture has felt the impact most acutely, especially in non-irrigated areas and farm land. Droughts have left their major impact on individuals (farm owners), on the agricultural industry, and also on other agriculture-related sectors of business and the economy.

During periods of drought, there is increased danger of forest fires, which could result in millions of board feet of timber being lost. As a consequence of the fires, in many cases, erosion can occur which causes serious damage to aquatic life, irrigation, and power generation due to heavy silting of streams, reservoirs, and rivers. Low stream-flows create an increase in water temperature, enhance depletion of oxygen, and for our fish resources, it means increased disease incidents and lack of spawning areas. All of the above effects result in economic and revenue losses for business, cities and the county.

Probability of Future Events:
Due to the continued presence – and possibly increasing effects – of global warming (as well as current forest management processes) the probability of drought conditions and consequential effects are considered **high**.



Overall Vulnerability to Hazard:
The impact and vulnerability of drought is considered **moderate**. This ranking was arrived at due to the relatively low percentage of residents affected by it and because potential wildfires have mostly remained in the low to non-populated areas of the County.
Risk:
Based the assessment of probability of occurrence and impact/vulnerability, the risk was assessed as **moderate**.

Volcano

Definition
A volcano is a vent in the earth's crust through which molten rock, rock fragments, other debris, gases or ashes are ejected from the earth's interior to escape to the surface. Volcanic events contaminate water supplies, damage machinery, and reduce visibility. They create smog and harmful gases impacting low-level areas, causing breathing difficulties and irritating skin, eyes, nose and throat.

More Information:
https://www.ready.gov/volcanoes

Regional Context
Of the five major Cascade volcanoes in Washington State - Mount Baker, Glacier Peak, Mount Rainier, Mount St. Helens, and Mount Adams – Mount St. Helens and Mount Adams together with Mount Hood in Oregon could impact Skamania County during a volcanic event. Both Mount Adams and Mount Hood have remained quiet so far.
But Mount St. Helens remains a potentially active and dangerous volcano, even though it has been quiescent since 1995. Four major explosive eruptions (each with at least 1 km of eruption deposits) occurred in the last 500+ years, and two of these eruptions were only two years apart. Furthermore, in the 15th century, an eruption of Mount St. Helens was five times larger than the event in 1980.

Following the eruption on May 18, 1980, there were several smaller explosive eruptions as well as a series of 16 dome-building eruptions through October 1986, which built the new (almost 1,000 feet high) lava dome in the crater.

Volcanoes commonly repeat their past behavior and thus there are possibilities for renewed eruptive activity at Mount St. Helens. Hazards associated with Mount St. Helens and the other dormant volcanoes are:

Pyroclastic Flows, which are hot (300-800 degrees Celsius) avalanches of dry, volcanic rock fragments and gases that descend the volcano's flanks at speeds up to 200 miles per hour.

Lava Flows are slower than the pyroclastic ones, but – depending on the viscosity – may still travel up to 30 miles per hour. Lava flows are extremely hot, destroy property, and cause forest fires - but, since they are slow moving, they pose a lesser threat to human life.

Tephra is volcanic ash/dust, and rock fragments that are expelled into the air from an explosive volcanic eruption. Rock fragments may be small (1/10 to 2-1/2 inch, called Lapilli) or large (larger than 2-1/2 inch, called blocks or bombs). Tephra can produce a hazardous plume or column of debris that subsequently falls to the ground in the direction of prevailing winds. These plumes can travel for hundreds of miles and deposit ash along their path. The thickness of the deposition and the size of the particles decrease with increasing distance from the site of eruption.

Lahars are rapidly flowing mixtures of water and rock debris - also referred to as debris or mud flows - that originate from volcanoes. At speeds between 20 and 40 mph, Lahars can travel over 50 miles downstream. The highest recorded speed of a Lahar during the 1980 Mount St. Helens eruption was 88 mph. Normally channeled into waterways, the speed and the debris Lahars carry can destroy forests as well as man-made structures including bridges, dams, roads, pipelines, buildings, and farms. The debris will fill in shipping channels, obstructing shipping lanes and impacting a channel's ability to handle large volumes of water.

Critical Facilities and Infrastructure in the Hazard Area

Northwood – a hamlet consisting of a number of recreational cabins/chalets with access to the east end of Swift Reservoir. Most of the structures are not primary residences.

Swift Dam – owned and operated by PacifiCorp for power generation. Operations are monitored 24/7 by PacifiCorp's on-location dam managers and the remote operations center.

Summary Assessment

Probability of Future Events:

Despite the fact that Skamania County could be impacted by a volcanic eruption of Mount St. Helens again, the USGS assesses the probability of catastrophic volcanic blast comparable to that of 1980 exceedingly **low**. The same probability is currently assigned to both Mount Adams and Mount Hood.

Overall Vulnerability to Hazard:

Impacted areas from Mount St. Helens would be the hamlet of Northwood, a number of (non-primary residence) cabins on the east end of Swift Reservoir and the PacifiCorp's Swift Dam and power generation. Due to the multitude of USGS sensory equipment around Mount St. Helens, ample

forwarding of volcanic activity would allow the evacuation of anyone at Northwood, and would allow PacifiCorp to draw down the level of Swift Reservoir to make room for any potential inflow of lahar into the water. A Mount Hood eruption, depending on prevailing wind direction at the time, could affect transportation infrastructure in the Columbia River Gorge. Based on these facts and expert assessment, vulnerability is deemed **moderate** for Skamania County.

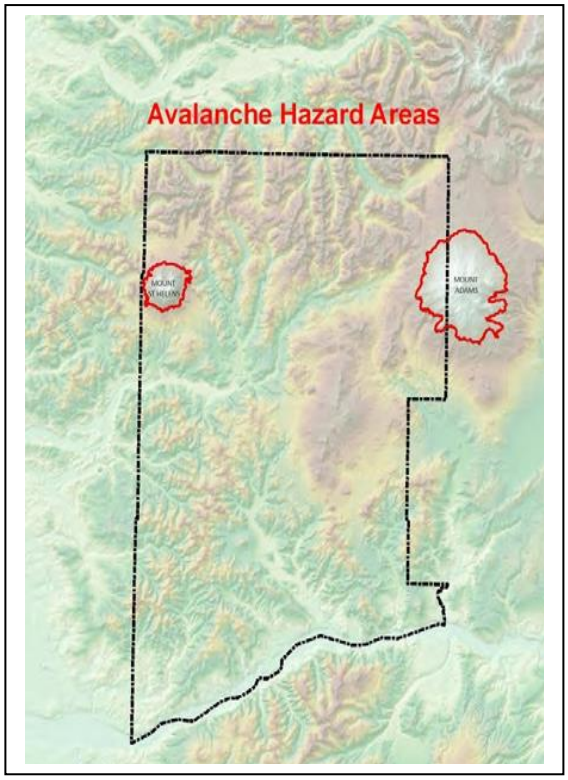
Risk:

Based on probability of occurrence and vulnerability/impact regarding exposure to volcanic risk is considered **low**.

Avalanche

Definition

An avalanche is a large amount of snow moving quickly down a mountain, typically on slopes of 30 to 45 degrees. When an avalanche stops, the snow becomes solid like concrete and people are unable to dig out. People caught in avalanches can die from suffocation, trauma or hypothermia. Avalanches occur when a layer of snow loses its grip on a slope and slides downhill. Avalanches are described as either loose (grains of snow lose hold on a slope and slide downhill), or slab (cohesive mass of snow breaks away from slope all at once). Slab avalanches may also be categorized as either wet or dry. Storms, rate of snowfall, temperature, wet snow, and terrain, are all factors that have an impact on avalanche danger.



Regional Context

Within the State of Washington, Skamania County has been identified as a county with parts of it vulnerable to avalanches. SR 504 Johnston Ridge has been identified by the Washington State Department of Transportation (WSDOT) as being at risk to avalanches (an area closed off during winter months). Most current avalanches occur in Skamania County's backcountry that is sparsely populated, if at all. Thus, only those few who participate in backcountry recreational activities (e.g., snowmobiling, cross-county skiing, snowshoe hiking, etc.) are exposed to this potential hazard.

Summary Assessment

Probability of Future Events:

Overall, there is a **low** probability of avalanches to occur in Skamania County.

Overall Vulnerability to Hazard:

Although avalanches can occur in and around the Mount St. Helens area of Skamania County, the impact to lives and property is typically limited because road access is closed during the winter. Skamania County's vulnerability is limited to the geographical area near Mount St. Helens where no one resides and where there is no technological infrastructure. The impact of avalanches on Skamania County is **low**.

Risk:

Due to the low probability and low vulnerability to avalanches in Skamania County, a risk rating of **low** is assigned.

Chapter 4. Mitigation Goals, Objectives, and Initiatives

Introduction

This is a framework which embraces Skamania County's mitigation strategy and serves as a plan to minimize potential damage and losses which were addressed in the hazard and risk analysis. Federal hazard mitigation planning requirements specify that a Hazard Mitigation Plan must identify goals that reduce communities' vulnerabilities to the hazards that are identified in the Plan's risk assessment. The mitigation strategy includes goals, objectives, and prioritized initiatives (projects, actions, etc.).

The Skamania County HMP Planning Team establishes mitigation goals and then – for each goal - matches objectives to reduce impacts of identified natural hazards on people, property, and environment and to reduce potential losses and/or damage. Based on these goals and objectives, mitigation initiatives are then identified. Mitigation initiatives are the "action items" in the Hazards Mitigation Plan for Skamania County and they come in the form of projects, actions, activities, and the like. These initiatives are meant to eliminate or at least reduce impact and losses due to natural hazards. Each of the identified initiatives / "action items" point to the hazards they address, which mitigation goal(s) they serve, and they are ranked by priority.

The 2010 Hazard Mitigation Plan has been considered by miscellaneous Skamania County boards and committees when creating, updating, and implementing plans, policies, and protocols. County staff – at times motivated by Emergency Management – has frequently touched and considered the content of the 2010 Hazard Mitigation Plan when working with and/or on plans such as those relating to building code, zoning, growth management, storm water and flood management, critical areas plans, etc.

In 2010, the hazard mitigation Planning Partners in Skamania County identified projects and initiatives to mitigate against natural hazards. In the ten years since, some progress towards accomplishment of these projects and initiatives has been made. The following tables list these mitigation actions/projects by category, i.e., for facilities and infrastructure, planning, equipment/training/exercises, and education (outreach). During this 2020 update of the Plan, the Skamania County HMP Planning Team looked at each action/project and evaluated whether or not it was accomplished, partially accomplished, or not accomplished. If an action/project was not, or not fully accomplished, a "reason why" was noted.

FACILITY AND INFRASTRUCTURE ACTION/PROJECTS	Accomplished – yes/no	If not accomplished – why?
General Inspection of Communication Towers	Yes – this is an ongoing, routine action	N/A
Reconstruct, strengthen, and/or retro-fit local emergency communications structures, facilities, and equipment to better withstand the effects of a major earthquake and aid in post-disaster communication capabilities of first response agencies. The Lookout and Red	No	Unable to obtain funding

Mountain repeater sites have priority needs.		
Fuel Breaks around "communities at risk"	Yes/No – these are ongoing County efforts	Efforts were futile due to opposition by USFS
Establish, improve and maintain evacuation and response routes	Yes - Evacuation planning & identifying major route options	Note: Evac route selected by Incident Command during event
"Firewise" structure protection – create defensible space around homes and other critical structures	Yes – ongoing efforts via PubEd/Outreach	N/A
General Inspection of Bridges, especially High Bridge, Susceptible to Multiple Failures	Yes – this is an ongoing process and legal requirement	N/A
General Inspection of Roads	Yes – this is an ongoing process	N/A
Maintaining defensible space and fuel breaks along Evacuation Routes	No – these are ongoing County efforts	Efforts were futile due to opposition by USFS
Signage to communicate emergency related information to residents and visitors	Yes – using mobile variable signs (WSDOT)	N/A
Retrofit and/or reconstruct county owned buildings/facilities and transportation systems to better withstand damage from a major earthquake	No	Funding was/is unavailable – But efforts for assessments have been made
General Inspection of Power Lines and Communication Lines	Yes – this is an ongoing process	N/A
General Inspection of All Buildings in General, Retrofitting and Engineering as Needed	Yes/No	Funding was/is unavailable – But efforts for assessment have been made
Create access on private roads for emergency response	Yes – has been started and is still being expanded upon	N/A
Establish a fuels disposal program	Yes – has actually been already tested during wildfires	Yes - ongoing
General Inspection of Pipelines	Yes – this is an ongoing process and legal requirement	N/A

Communicate with Commercial Industry Regarding Mitigation???	Yes	N/A
Create defensible fuel zones and fire breaks along roads accessing high-use recreation areas	Yes/No – this is an ongoing process	Efforts are hampered due to limited collaboration & cooperation by USFS
Re-locate all above-ground utilities underground within 300 feet of all county- owned buildings to facilitate egress of employees and citizens and ingress of emergency response personnel following a damaging earthquake or severe storm.	No	No funding available for this project

PLANNING ACTION/PROJECTS	Accomplished – yes/no	If not accomplished – why?
Develop a county-wide communications plan for all-hazards disasters, to include back-up communications plans, such as use of amateur radio	Yes – this plan is in place and is updated on an annual basis and/or after drills and functional exercises	N/A
Establish an evacuation plan to include a public notification system and identification of escape routes, escape areas, staging areas and helicopter landing zones	Yes – the Emergency Community Notification System is in place, basic escape routes identified, including staging and LZs	N/A
Evaluate, and prioritize all county transportation infrastructure systems for needed seismic retro-fitting	No	No funding available for this project
Develop a plan for all-hazards evacuation of special needs populations during a disaster	Yes – these facilities all have emergency operations plans in place including evacuation	N/A
Prioritize residential fuel mitigation projects	Yes – this is a continuing PubEd and Outreach effort	N/A
Update Flood Information and	Yes – this is a continuing by the Planning/Building	N/A

Update Maps in Flood Plain	Departments	
Adjust Local Codes to Address Enhanced Stability and Increase Protection from Natural Hazards	Yes – this is a continuing by the Planning/Building Departments	N/A

Continue Critical Area Code Requirements Regarding Volcanic and Landslide Areas - Better Utilize the Required Engineering Reports	Yes – this is a continuing effort by the Planning/Building Departments	N/A
Evaluate all Known Hazards - Example Maple Hill Slide and Update Possible Requirements for BP etc.	Yes – this is a continuing by the Planning/Building Departments and Dept. of Emergency Management	N/A
Designate Emergency Areas (Staging, Helicopter LZ and Evacuation)	Yes – this is a continuing by the Sheriff's Office & the Dept. of Emergency Management	N/A
Develop a mobilization handbook for first responders to include identification of hazards, bridge weight limitations, gates, road accessibility, power lines, gas lines, fire hydrants, etc.	Yes – Law Enforcement, Fire, & EMS have this (constantly updated) information in some cases even in electronic format	N/A
Enhance GPS data collection and map building	Yes – The County's expert GIS resource is available	N/A
Enhance the Public Notification Plan.	Yes – the Emergency Community Notification System is continually updated	N/A
Identify at least one primary and one alternate meeting place/shelter for each unincorporated area	No	Cannot predict hazard location, travel, expanse, etc. – these decisions are made by IC during the emergency
Ensure all new construction permit applications be screened for potential hazards and all appropriate codes are enforced.	Yes – this is a continuing by the Planning/Building Departments	N/A
Resolve conflicts between National Scenic Area (NSA) and Firewise requirements	Yes/No – a continuous effort is being put forth by the County	The NSA is uncooperative and hinders any progress in Firewise implementation

Develop a plan for all-hazards evacuation of pets and livestock, during a disaster.	Yes – an ESF#11 was established staffed by volunteers	N/A

EQUIPMENT, TRAINING & EXERCISES ACTION/PROJECTS	Accomplished – yes/no	If not accomplished – why?
Programmable reader boards at specific points throughout the county to inform and educate community members of wildfire danger, burn bans, evacuation routes, assembly points and other emergency information.	Yes – arrangements have been made for the use of mobile reader-boards from WSDOT	N/A
Engage community members in "personal preparedness" activities through expansion of CERT program to include active groups in each unincorporated area and SERT within the school system.	Yes/No – Volunteer cadre of emergency workers (EWs) is trained and available	The CERT program transitioned to a different EW-Cadre; still trying to get Schools interested
Expand the use of websites, mass email, news articles, editorials, brochure distribution, etc. to educate community members on all-hazards preparedness with an emphasis on Wildland Fire, Earthquake, Storm, Landslide and Flooding (top five identified hazards) Include information related to Firewise and the National Flood Insurance Program (NFIP)	Yes - Outreach and Public Education efforts are using the County's website, local news media in an efforts to increase awareness, preparedness and thus the community's resilience	N/A
"Firewise" Public Education Workshops	Yes – this is an ongoing effort	N/A
Junior "Firewise" Programs	No	Tried program, but was not successful
Expanded participation in annual community events such as the Skamania County Fair to encourage community preparedness for all-hazards.	Yes – County Fair as well as other community get-togethers are used to spread the preparedness message	N/A
Program for high school seniors to participate in community preparedness educational activities as part of their senior project or as a community service project.	Yes – this is an ongoing effort	N/A

EDUCATIONAL ACTION/PROJECTS	Accomplished – yes/no	If not accomplished – why?
Attain adequate communications equipment	Yes/No – some interop equipment was acquired	Very limited funding – thus need additional equipment
Achieve Communication Interoperability	Yes – an ongoing effort to update interop	N/A
Develop 'common protocol', training and standards among Skamania County Emergency Responders (enhance mutual aid agreements)	Yes – this is an ongoing effort to ensure 1st responders' procedures, standards and training are up to date	N/A
Upgrade Firefighting personal safety equipment to NFPA standards	Yes – this is an ongoing effort by all fire agencies	N/A
Organize and perform multi-agency training/ drills and involve CERT in emergency response, training and exercises.	Yes – the volunteer cadre of emergency workers (EWs) is trained and exercised regularly	N/A
Pursue training for NFIP staff to include Community Assistant Visits and information regarding the CRS program	Yes – this is a continuing effort by the Planning/Building Department	
Coordinate with DNR and FS to provide "red card" training to volunteer firefighters.	Yes – this is an ongoing effort by all fire agencies	N/A
Acquire updated technology equipment for first responders such as GPS units and Laptop Computers.	Yes/No – some progress was made	Insufficient funding hindered a complete implementation

During the review of the above, the current HMP Planning Team realized that more work is required in order to further enhance the resilience of Skamania County. In this sense, it is the Team's strong opinion that all of the 2010 goals, objectives, and projects/initiatives are still valid and must be considered in this updated 2020 Plan as well.

Starting this section of the Plan's 2020 update, the Team started with the development of actualized mitigation goals and objectives. The following is a list of the County's five mitigation goals and associated fifteen objectives. The list is not prioritized in terms of importance. Numbering the goals and objectives is merely a method to refer back to them and link them with certain initiatives and projects.

Goal 1: Protect Life.

Objective (Obj.) 1.1 - Improve systems that provide warning and emergency communications.

Obj. 1.2 - Develop or amend laws so they effectively address hazard mitigation.

Obj. 1.3 - Reduce the impacts of hazards on vulnerable populations.

Obj. 1.4 - Strengthen state and local building code enforcement.

Obj. 1.5 - Train emergency responders.

Goal 2: Protect Property.

Obj. 2.1 - Protect critical assets.

Obj. 2.2 - Protect and preserve facility contents.

Obj. 2.3 - Reduce repetitive and severe repetitive losses, including those caused by flooding.

Goal 3: Promote a Sustainable Economy.

Obj. 3.1 - Provide incentives for mitigation initiatives.

Obj. 3.2 - Continue critical business operations.

Obj. 3.3 - Form partnerships to leverage and share resources.

Goal 4: Protect the Environment.

Obj. 4.1 - Develop hazard mitigation policies that protect the environment.

Goal 5: Increase Public Preparedness for Disasters.

Obj. 5.1 - Understand natural hazards and the risk they pose.

Obj. 5.2 - Improve hazard information, including databases and maps.

Obj. 5.3 - Improve public knowledge of hazards and protective measures so individuals appropriately respond during hazard events.

Obj. 5.4 - Develop new policies to enhance hazard mitigation initiatives.

Based on these goals and objectives, the Skamania HMP Planning Team developed a number of mitigation initiatives. These initiatives are grouped as follows:

a. Facilities and Infrastructure projects;
b. Planning projects;
c. Public Education – Outreach projects;
d. Equipment – Training - Exercise events.

Each initiative is linked to which natural hazard it addresses, which goal(s) and objective(s) it refers to, which geographical sub-area of the County it relates to, which agency takes the lead for this initiative, and examples of what possible funding sources may exist to be utilized.

Listed here below are possible sources to fund the completion of initiatives. Many of the funding sources are competitive processes. Some may only be available to apply for after a major disaster declaration. The list below is not "all there is," but is a sample of funding programs that could help fund initiatives.

1. **The Hazard Mitigation Grant Program** (HMGP) provides grants to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

2. **Flood Mitigation Assistance Program (FMA)** program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). The Federal Emergency Management Agency (FEMA) provides FMA funds to assist communities to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program.

3. **Economic Development Administration (EDA) National Disaster Recovery Framework (NDRF)** EDA's role in disaster recovery is to facilitate delivery of Federal economic development assistance to local governments for long-term community economic recovery planning, reconstruction, redevelopment and resiliency. Following a disaster, EDA responds by first coordinating with its sister bureaus and other agencies engaged in disaster recovery efforts to share information and data on the ramifications of the disaster. In addition, EDA reaches out to its economic development practitioner network (particularly its network of Economic Development Districts (EDD) District Organizations) to collect on-the-ground information on the economic impacts of the disaster event.

4. **US Dept. of Agriculture (USDA) Community Facilities Loans and Grant Programs** provide loans, grants and loan guarantees for essential community facilities in rural areas. Priority is given to health care, education and public safety projects. Typical projects are hospitals, health clinics, schools, fire houses, community centers and many other community based initiatives.

5. **Nonprofit Grant Fund Opportunities (NPO)** such as the Lower Columbia Fish Recovery Board's **Salmon Recovery Funding Board (SRFB)** provide funds for salmon protection and restoration that may also minimize potential impact of flooding.

6. **Local Capital Facilities Funds** It is assumed that a combination of local capital facilities funds and in-kind contributions, determined on a case by case basis, will be leveraged when grant funds require a match.

Facilities and Infrastructure Initiatives

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	High	General Inspection of Communication Towers	X	X	X	X					1, 5	1, 2		1	2	Local	User agencies - ongoing
High	High	High	High	High	High	High	Reconstruct, strengthen, and/or retro-fit local emergency communications structures, facilities, and equipment to better withstand the effects of a major earthquake and aid in post-disaster communication capabilities of first response agencies. The Lookout and Red Mountain repeater sites have priority needs.	X	X	X		X				1, 5	1, 2	3	1	2	Local, HMGP	Sheriff's Office - ongoing
High	High	High	High	High	High	High	Fuel Breaks around "communities at risk"	X								2	1, 2, 3	1, 2, 3	1	1, 3, 4	Local, HMGP	All FDs - ongoing

Facilities and Infrastructure Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS							Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano / Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	Low	Establish, Improve and Maintain Evacuation/Response Routes and upgrade shelter facilities (backup power, heat, freezers, fridges, WiFi comms)	X	X	X	X	X		X X	3, 5	1, 2	2	1	1, 2, 3	Local	County, cities, WSDOT - ongoing
High	High	High	High	High	High	Low	"Firewise" structure protection – create defensible space around homes and other critical structures	X							2	1, 2	1, 2, 3		1, 2, 3, 4	Local, FPSG	All FDs - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Medium	General Inspection of Bridges, especially High Bridge, Susceptible to Multiple Failures		X	X	X	X			2	1			4	Local, HMGP	Public Works - short-term

Facilities and Infrastructure Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS							Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Medium	General Inspection of Roads		X	X	X	X		X	5	1	2		1, 2	Local	Public Works - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Medium	Maintaining defensible space and fuel breaks along Evacuation Routes	X							2	1	2	1	1, 2	Local, FPSG	Public Works, DNR - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Medium	Signage to communicate emergency related information to residents and visitors	X	X	X	X	X	X	X X	1, 2, 5	1, 2			1, 2, 3	Local, HMGP	Public Works - ongoing

Facilities and Infrastructure Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS							Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	Medium	Medium	Medium	Medium	Medium	Low	Retrofit and/or reconstruct county owned buildings/facilities and transportation systems to better withstand damage from a major earthquake		X						2	1, 2	2	1	1, 4	Local, HMGP	Public Works, Facilities, County - long-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	General Inspection of Power Lines and Communication Lines		X	X	X	X			5	1	2		1, 2	Local	Owners, users - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Low	General Inspection of All Buildings in General, Retrofitting and Engineering as Needed		X	X	X	X				1, 2	2	1	1	Local, HMGP	Facility owners - ongoing

Facilities and Infrastructure Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS							Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano / Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Low	Create access on private roads for emergency response	X	X	X	X	X		X / X	5	1	1, 2, 3	1	1, 2	Local	Planning, County - med-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	Establish a fuels disposal program	X								1	1, 2, 3	1		Local	All FDs - ongoing
Medium	Medium	Medium	Medium	Medium	Low	Low	General Inspection of Pipelines	X	X	X	X	X			5	1	1, 2, 3	1	1, 2	Local, PERG	Utilities - ongoing

Facilities and Infrastructure Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS							Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Low	Low	Communicate with Commercial Industry Regarding Mitigation	X	X	X	X	X			1	1, 2, 3	1, 2, 3	1	1, 2	Local	Priv. business and industry - med-term
Low	Low	Low	Low	Low	Low	Low	Create defensible fuel zones and fire breaks along roads accessing high-use recreation areas	X							5	1	2	1	1, 2	Local, FPSG	Public Works, DNR - ongoing

Low	Low	Low	Low	Low	Low	Low	Re-locate all above-ground utilities underground within 300 feet of all county- owned buildings to facilitate egress of employees and citizens and ingress of emergency response personnel following a damaging earthquake or severe storm.		X	X					1	1, 2	2		1, 2	Local	Public Works, PUD - long-term

Planning Initiatives

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	High	Consider and integrate important information in this 2022 Hazard Mitigation Plan as appropriate during creating, updating, implementing, and other planning activities regarding – for instance - growth management, storm water and flood management, critical areas plans, building code, and zoning.	X	X	X	X	X	X	X	X	2,3,4,	1,2,3	1,2,3	1	1,4	Local	All County agencies

High	High	High	High	High	High	High	Update & maintain county-wide, all-hazards communications plan including back-up comm plans, e.g., amateur radio	X	X	X	X	X		X	X	1, 3, 5	1, 2	2		2, 3	Local	EMES Council - ongoing
High	High	High	High	High	High	Medium	Establish evacuation plans including the public notification system and identify escape routes/areas, staging areas and helicopter landing zones	X	X	X	X	X		X	X	1, 3, 5	1	2, 3	1	2, 3, 4	Local	DEM, 1st Responders - ongoing
High	High	High	High	High	High	Medium	Evaluate and prioritize all county transportation infrastructure systems for needed seismic retro-fitting		X							2, 3, 4	1, 2, 3	2, 3	1	1, 2, 3, 4	Local	Public Works, WSDOT - med/long-term

Planning Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	Low	Develop a plan for all-hazards evacuation of special-needs populations during a disaster	X	X	X	X	X		X		1, 3, 5				1, 2, 3, 4	Local	DEM, Pub.Health, LTCF - ongoing
High	High	High	High	High	High	Low	Prioritize and encourage residential vegetation fuel mitigation projects	X					X			3	1, 2, 3	1, 2, 3	1	1, 2, 3, 4	Local	DEM, FDs - ongoing
Medium	High	High	Medium	High	Low	Low	Update flood-related Information and revise flood plains mapping, if necessary			X		X				2, 4	1, 2, 3	3	1	1, 2, 3, 4	Local, HMGP	Planning - med/long-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	Adjust local codes to address enhanced stability and increase protection from natural hazards	X	X	X	X	X				2, 4	1, 2, 3	1, 2, 3	1	1, 2, 4	Local	Planning - med/long-term

Planning Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Low	Continue to maintain critical area code requirements regarding volcanic and landslide areas - better utilize the required engineering reports				X			X		2, 4	1	2, 3	1	1, 2, 3, 4	Local	Planning - med/long-term
Medium	Medium	Medium	Medium	Medium	Medium	Medium	Continuously evaluate all natural hazards, update possible changing mitigation requirements, and designate emergency areas (staging, LZs, etc.)	X	X	X	X	X	X	X	X	2, 5	1, 2, 3		1	1, 2, 3, 4	Local	Planning - med/long-term
Medium	Medium	Medium	Medium	Medium	Medium	Medium	Develop and keep updated a mobilization handbook for first responders to include identification of hazards, bridge weight limitations, gates, road accessibility, power lines, gas lines, fire hydrants, etc.	X	X	X	X	X	X	X	X	1, 3, 5	1, 2	1, 2, 3	1	1, 2	Local	DEM, 1st responders, PUD, PW, GIS - long-term

Planning Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Medium	Enhance GPS data collection and map building for all natural hazard sources, areas of immediate impact, and collaterally affected areas	X	X	X	X	X	X	X	X	1, 3	1, 2,3	2, 3	1	1, 2, 3, 4	Local, HMGP	PW, GIS - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Low	Update and enhance the public emergency notification plan	X	X	X	X	X		X	X	1, 3, 5	1, 2	2		2, 3	Local	DEM - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Low	In the unincorporated area, identify at least one primary and one alternate meeting place/shelter for potential impact area of natural hazards	X	X	X	X	X		X	X	1, 3, 5				2, 3, 4	Local	DEM, ARC - ongoing

Planning Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and Objective #s in that Goal)					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Low	Ensure all new construction permit applications be screened for potential natural hazards and all appropriate codes that need to be enforced	X	X	X	X	X		X	X	2, 3 4	1, 2, 3	1, 2, 3	1	1, 2, 3, 4	Local	Planning - ongoing
Low	Low	Low	Low	Low	Low	Low	Resolve conflicts between NSA and Firewise requirements and then adjust these programs before roll-out	X								3, 5	1, 2		1	1, 2, 3, 4	Local	FDs, Local Gov't - ongoing
Low	Low	Low	Low	Low	Low	Low	Develop a plan for all-hazards evacuation of pets and livestock during a disaster	X	X	X	X	X	X	X			1	2		1, 3	Local, USDA	DEM, local veterinary - med-term

Public Education - Outreach Initiatives

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	Medium	Acquire and implement programmable reader boards at specific points throughout the county to inform and educate community members about wildfire danger, burn bans, evacuation routes, assembly points and other emergency information	X	X	X	X	X	X	X	X	1, 3, 5		2, 3		2, 3	Local	PW, Dispatch, DEM - long-term
High	High	High	High	High	High	Medium	Engage community members in "personal preparedness" activities including expansion of CERT program to include active groups in each unincorporated area and SERT within the school system	X	X	X	X	X	X	X	X	3, 5		2		3	Local	DEM, FDs, EMS, volunteers - long-term

Public Education - Outreach Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	Low	Expand the use of websites, mass email, news articles, editorials, brochure distribution, etc. to educate community members on all-hazards preparedness with an emphasis on the top five identified hazards and also include information related to Firewise and the National Flood Insurance Program (NFIP)	X	X	X	X	X	X	X	X	1, 3, 5	1, 2, 3	1, 2, 3	1	1, 2, 3	Local, FPSG	DEM, FDs, EMS, volunteers - long-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	Conduct "Firewise" Public Education Workshops	X		X			X			1, 2, 5	1, 2, 3	1, 2, 3	1	1, 2, 3	Local, FPSG	DEM, FDs, EMS, volunteers -
Medium	Medium	Medium	Medium	Medium	Medium	Low	Introduce and conduct junior "Firewise" programs	X		X			X			1, 2, 5	1, 2, 3	1, 2, 3	1	1, 2, 3	Local, FPSG	DEM, FDs, EMS, volunteers -

Public Education - Outreach Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Low	Expand participation in annual community events such as the Skamania County Fair to encourage community preparedness for all-hazards	X	X	X	X	X	X	X	X	3, 5	1, 2, 3	1, 2, 3	1	1, 2, 3	Local	DEM, FDs, EMS, volunteers - long-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	Introduce a program for high school seniors to participate in community preparedness educational activities as part of their senior project or as a community service project	X	X	X	X	X	X	X	X					1, 2,3	Local	DEM - long-term

Equipment – Training - Exercise Initiatives

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and related Objective number)				FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
High	High	High	High	High	High	Low	Obtain adequate interoperable communications equipment	X	X	X	X	X	X	X	X	1, 5	1		5	Local	All agencies - med-term
High	High	High	High	High	High	Low	Achieve communication interoperability through the County and connect to the Region (OR and WA)	X	X	X	X	X	X	X	X	1, 5	1		5	Local	All agencies & Reg4, OR - med-term
High	High	High	High	High	High	Low	Develop and maintain a common response protocol to include training and standards among County emergency responders (enhance mutual aid agreements)	X	X			X		X		1, 5	1		5	Local	All agencies - short-term
High	High	High	High	High	High	Low	Upgrade firefighting personal safety equipment to NFPA standards	X		X						5	1			Local , FPSG	All FDs - short-term

Equipment – Training - Exercise Initiatives (cont'd)

Geographical AREA & PRIORITY (High, Med, Low)							INITIATIVES	Addressed HAZARDS								Addressed GOALS (and related Objective number)				FUNDING	Assigned TASKING
Greater Stevenson	Greater Wind River	Beacon Rock	Little White Salmon	West End	Swift	Rest of County	Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment Public Preparedness	Possible Funding Sources	Responsible Department / Agency / Organization
Medium	Medium	Medium	Medium	Medium	Medium	Low	Organize and perform multi-agency training and drills, and involve CERT in emergency response, training and exercises	X	X	X	X	X		X		5	1		2	Local	All 1st Responders - ongoing
Medium	Medium	Medium	Medium	Medium	Medium	Low	Pursue training for NFIP staff to include community assistant visits and information regarding the CRS program			X		X				2, 4, 5	1, 2, 3		1 1, 2, 3, 4	Local	DEM, County - med-term
Medium	Medium	Medium	Medium	Medium	Medium	Low	Coordinate with DNR and USFS to provide "red card" training to volunteer firefighters	X								5	1, 2		1	Local	All FDs - ongoing
Medium	Medium	Medium	Medium	Medium	Low	Low	Acquire updated technology equipment for first responders such as GPS units and Laptops/tablets	X	X	X	X	X		X		5	1, 2		2	Local	All 1st Responders - med-term

Prioritization and "Benefit versus Cost" of Initiatives

The listed initiatives in the tables above are already ranked by need and priority. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was the result of the averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost. Here below are all County initiatives ranked from Highest to lowest "Benefit versus Cost:"

9 - "Firewise" structure protection – create defensible space

9 - Expand communication to community members on all-hazards preparedness

8 - Integrate information into 2022 Hazard Mitigation Plan during review & updating

8 - Update county-wide, all-hazards communications plan

8 - Continuously evaluate all natural hazards, update possible changing mitigation requirements

8 - Update and enhance the public emergency notification plan

8 - Ensure all new construction permit applications be screened for potential natural hazards

8 - Engage community in "personal preparedness" activities, including CERT program

7 - Fuel Breaks around "communities at risk"

7 - Update flood-related Information and revise flood plains mapping

7 - Maintain critical area code requirements regarding volcanic and landslide areas

7 - Adjust local codes to address enhanced protection from natural hazards

6 - General Inspection of Communication Towers

6 - General Inspection of Roads

6 - Determine alternate meeting place/shelter for potential impact area of natural hazards

6 - Establish evacuation plans including the public notification system

6 - Encourage residential vegetation fuel mitigation projects

6 - Develop and maintain a common response protocol to include training

6 - Upgrade firefighting personal safety equipment to NFPA standards

6 - Organize and perform multi-agency training and drills, and involve CERT

6 - Conduct "Firewise" Public Education Workshops

6 - Introduce and conduct junior "Firewise" programs

5 - Retro-fit local emergency communications structures

5 - Resolve conflicts between NSA and Firewise requirements

5 - Pursue training for NFIP staff to include community assistant visits

5 - Evaluate and prioritize all county transportation infrastructure systems

5 - Improve and Maintain Evacuation/Response Routes

5 - Defensible space and fuel breaks along Evacuation Routes

5 - Achieve communication interoperability throughout County and connect to the Region 4
5 - General Inspection of Power Lines and Communication Lines
5 - Expand participation in annual community events, e.g., the Skamania County Fair
4 - General Inspection of Bridges
4 - Develop a plan for all-hazards evacuation of special-needs
4 - Communicate with Commercial Industry Regarding Mitigation
4 - Re-locate all above-ground utilities underground
4 - Coordinate with DNR and USFS to provide "red card" training
4 - Develop and keep updated a mobilization handbook for first responders
3 - Signage to communicate emergency related information to residents and visitors
3 - Retrofit and/or reconstruct county owned buildings/facilities
3 - Establish a fuels disposal program
3 - Obtain adequate interoperable communications equipment
3 - Introduce program for high school seniors to participate in community preparedness
3 - Develop a plan for all-hazards evacuation of pets and livestock
3 - Acquire updated technology equipment for first responders
3 - Enhance GPS data collection and map building for all natural hazard sources
2 - General Inspection of All Buildings in General, Retrofitting and Engineering
2 - General Inspection of Pipelines
2 - Defensible fuel zones and fire breaks along roads accessing recreation areas
1 - Create access on private roads for emergency response

Jurisdictional Annexes

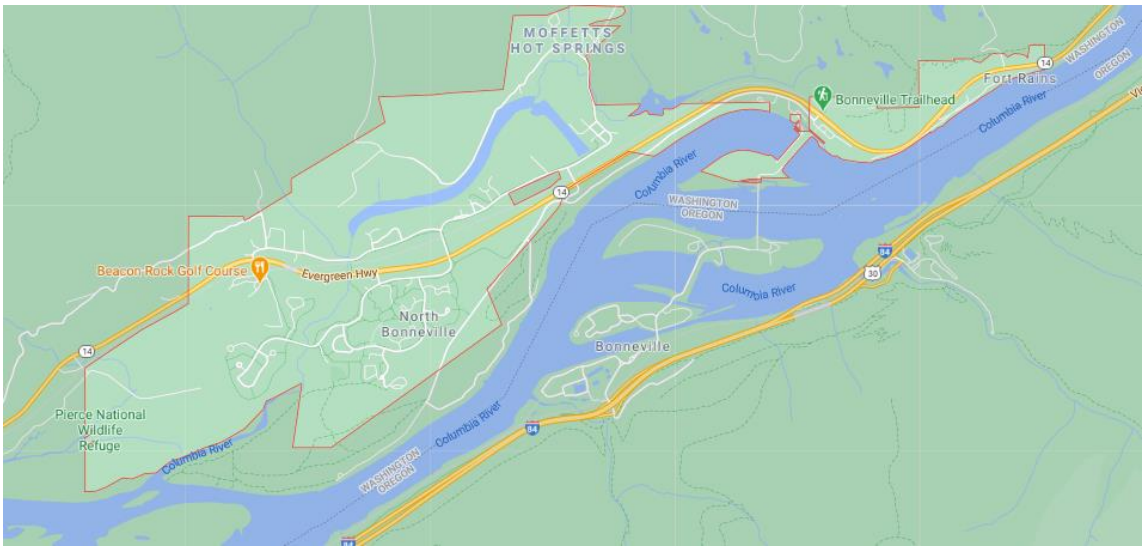
Chapter 5. City of North Bonneville

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Tom Jermann Planning Advisor tomj@northbonneville.net 509.427.8182	Deanna Adams Chief Administrative Officer deanna@northbonneville.net 509.427.8182

Jurisdiction Profile

- The Community of North Bonneville started as a construction town during the erection of the Bonneville dam in 1933. North Bonneville was incorporated in 1935.
- In 1971, when a second powerhouse at the dam was erected in the same place where the original community was built, the U.S. Army Corps of Engineers constructed a new City of North Bonneville at its now-current location. The $35 million relocation project included raising the new town above the 100-year flood plain, construction of streets, utilities, lighting system, sewer and sewage treatment, water supply, public building, a business district, and parks. The relocation project was completed in 1978.
- In 2019, the population of North Bonneville was 1,126 living on the City's (just shy of) 3 square miles.



Asset and Resources Profile

North Bonneville's assets and resources include:

- Transportation: State Highway (State Route 14, County roads, City streets, pathways, railways, and bridges
- Utilities: Natural gas pipelines, Bonneville Dam 2nd powerhouse, BPA substation, power lines, telephone lines, water system, wastewater system, underground city television cables
- Facilities: Post office, municipal structures, industrial buildings, golf course, assisted living facility, homes, and business and industrial entities
- Other: City ball fields, tennis courts, park facilities, boat access facilities, and recreational areas

North Bonneville is predominantly a residential community, but has a growing industrial area and there is still room for growth in the business district.

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- North Bonneville Comprehensive Plan (Municipal Code Title 20)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- North Bonneville Environmental Protection Chapter 21.04 (Municipal Code Title 21)
- North Bonneville Building Codes Chapter 17.04 (Municipal Code Title 17)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

North Bonneville frequently considers the Hazard Mitigation Plan as a guidance on specific planning activities involving for example the Comprehensive Plan, building codes, etc. This practice will continue to be in place using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	

2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the City of Bonneville and the City coordinates its flood plain management protocols and processes with the County. The City of North Bonneville implements Municipal Code Chapter 17.56 in accordance with the NFIP. These regulations establish a permit process for all special flood hazard areas. In this permit process, the City's Building Official requires compliance with general and specific standards to minimize public and private losses due to flood conditions. The standards involve review and acceptance of projects' site planning, utility installation, construction practices, elevation certificates, etc. Chapter 17.56 was last updated in 2020 to ensure compliance with national expectations.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Wildfire	High	High	High
Earthquake	High	High	High
Severe Storm	High	High	High

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
While severe storms with possible flooding, freezing rain or snow, and slides have a high probability of occurring, vulnerability medium and impacts are mostly on transportation, power, and communications. Wildfire has a higher (70%) probability of occurrence than earthquakes (50%), but vulnerability to either would be equally high. All three identified hazards potentially impact housing structures, transportation infrastructure, communications and power transmission lines, and residents' mobility.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Establish Evacuation Routes to include signage - North Side North Bonneville	No	Lack of funding
Establish preparedness plan with city administrative delegation	No	Lack of funding
Portable temporary emergency signage	No	Lack of funding
Expand City-Wide Emergency Notification System	No	Lack of funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Projects Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Establish Evacuation Routes to include signage - North Side North Bonneville	X	X	X	X	X		X		X					Local	Public Works
Establish preparedness plan with city administrative delegation	X	X	X	X	X	X	X	X	X	X		X	X	Local	City Staff
Portable temporary emergency signage	X	X	X	X	X	X	X	X	X	X			X	Local	Public Works
Expand City-Wide Emergency Notification System	X	X	X	X	X	X	X		X	X			X	Local	County DEM

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Projects Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and city owned building and venues	X								X	X	X	X	X	Local	Public Works
In city-owned facilities start making earthquake improvements, e.g., securing equipment and furniture / preventing toppling over during tremors		X							X	X	X		X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms	X		X						X	X	X	X		Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Establish preparedness plan with city administrative delegation

8 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Establish Evacuation Routes to include signage

6 - Expand City-Wide Emergency Notification System

4 - Portable temporary emergency signage

4 - Develop defensive space around critical infrastructure

3 - In city-owned facilities start making earthquake improvements

Chapter 6. City of Stevenson

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Leana Kinley City Administrator leana@ci.stevenson.wa.us 509.427.5970	

Jurisdiction Profile

- The City of Stevenson is named after George H. Stevenson, an early settler, who purchased the original town site in the 1800s. In 1893, the town became the County seat and in 1907 was incorporated as the City of Stevenson.
- The city's size is just shy of 2 square miles and in 2021 the population was 1,655.
- The major transportation routes through the (Washington side) Columbia River Gorge run through Stevenson, State Highway 14 and the BNSF railroad.
- The City is governed by a mayor and a five-member city council and city business is managed by a city administrator.

Asset and Resources Profile

Stevenson's assets and resources include:

- Transportation: State Highway (State Route 14), local roads and streets, pedestrian and bicycle trails, a trunk rail line, bridges, and a boat landing and docking facility.

- Utilities: Water collection, treatment and distribution system; sanitary sewer collection and treatment infrastructure; stormwater collection and treatment system; electrical transmission and distribution facilities; telecommunications networks and towers; natural gas transmission and distribution infrastructure.

- Other facilities: Post office, municipal structures, industrial and business buildings, government buildings, faith-based institutions, commercial timber, and structures of historic, cultural, and/or recreational importance.

Transportation Description	Value
Public roads - Stevenson's public road network covers approximately 17 miles.	Land - $12,140,000 Improvements - $15,760,000
Rail facilities - The Burlington Northern and Santa Fe Railroad includes a mainline and two sidings within Stevenson	
Boat facilities - The Port of Skamania County operates a commercial tour boat landing and a recreational boat ramp	
Utilities Description	**Value**
Public Water System - The water system includes well and surface sources, treatment equipment, reservoirs, pump stations, distribution lines, and metering equipment.	Land- $960,000 Improvements- $3,870,000
Public Sanitary Sewer System - The sanitary sewer system includes collection lines, manholes, pump stations, treatment equipment and an outfall pipe.	Land- $100,000 Improvements- $18,422,434 (to be completed in 2022)
Public Stormwater System - The stormwater system includes catch basins, collection lines, manholes, swales, and outfall pipes	Land- Included in public roadways Improvements - $896,153
Other Assets Description	**Value**
Building Stock - There are 602 improved parcels in Stevenson. This includes all privately - and publicly- owned parcels.	Mean Improvement Value- $277,000
Fire Protection System - The fire protection system includes a fire hall, hydrant, and fire trucks	Land- $50,000 Improvements - $170,000 Rolling Stock/Equipment - $190,000
City Government - The City government includes City Hall, vehicles, and other City equipment.	Land- $70,000 Improvements - $618,000 Rolling Stock/Equipment - $1,195,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Municipal Code of the City of Stevenson, particularly Title 8 (Health & Safety), Title 13 (Public Utilities), Title 14 (Mobile Home Communities), Title 15 (Buildings and Construction), Title 16 (Subdivisions), Title 17 (Zoning), and Title 18 (Environmental Protection).
- City of Stevenson Comprehensive Plan (2013)
- City of Stevenson Water System Plan (2017)
- City of Stevenson General Sewer & Facilities Plan (2019)
- Rock Cove Environmental Evaluation and Comprehensive Plan (1997)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

When developing or updating codes, ordinances, policies, or plans important information in this 2021 Hazard Mitigation Plan has been and will continue to be considered. Examples: City Codes, comprehensive plan, water systems plan, etc.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	

1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There is one repetitive loss residential properties in the City of Stevenson and the City coordinates its flood plain management protocols and processes with the County. The City of Stevenson implements SMC 15.24 in accordance with the NFIP. These regulations establish a permit process for all special flood hazard areas. In this permit process, the City's Building Official requires compliance with general and specific standards to minimize public and private losses due to flood conditions. The standards involve review and acceptance of projects' site planning, utility installation, construction practices, elevation certificates, etc. These regulations were adopted in 1990 and updated in 2018 to ensure compliance with national expectations.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Earthquake	Medium	High	High
Wildfire	Medium	High	High
Severe Storm	Medium	High	High
Landslide	Medium	Medium	Medium
Drought	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community. While all five hazards are listed as a medium probability, a fine grading is warranted. The more frequently occurring Severe Storm usually associated also with Landslides would receive a 70% probability of occurrence, Wildfire 60%, Drought 50%, and Earthquake 40%.
Vulnerability to Severe Storms, Wildfire, and Earthquake would be equally high. Vulnerability to Landslides and Drought would be medium. Except for Drought, the other four identified hazards potentially impact housing structures, transportation infrastructure, communications and power

transmission lines, and residents' mobility. Drought's impact may require water conservation measures in the City and some impact on the limited agricultural activities in the jurisdiction.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

FACILITY &/OR INFRASTRUCTURE PROJECTS	Accomplished – yes/no	If not accomplished – why?
Remove publicly-owned and repetitive loss buildings from the flood plain	Yes	N/A
Replace Rock Creek drive bridge with a free-span bridge	No	No funding
Construct a multi-agency fire / ambulance / emergency response station in Stevenson	No – these are ongoing efforts	No funding
Install water-tight manhole covers in flood-prone areas	No	No funding
Flood-proof Rock Creek sewer pump station	No	Construction begins summer of 2021
Bury all above-ground utilities except in major landslide hazard areas	No	No funding
Establish, improve, and maintain evacuation and response routes	No	No funding
Connect Iman Springs with the City Water System	No	No funding
Establish fuel breaks around Stevenson and its evacuation routes	No	No funding
Move main water-line from West Loop Road to Gropper Road	No	No funding

Upgrade water system telemetry / SCADA System	Yes, for water; under construction for wastewater in 2022	N/A
Improve Kanaka Creek underpass as an evacuation route	No	Currently planned for 2021
Install evacuation route and other emergency related signage	No	No funding
Retrofit publically-owned buildings to withstand seismic events	No	No funding
Install Wand / radio-read water meters	Yes	N/A
Improve drainage along the City's Watershed Road	Yes	N/A

PLANNING PROJECTS	**Accomplished – yes/no**	**If not accomplished – why?**
Incorporate Hazard Mitigation into existing and future plans and development regulations	Yes	N/A
Establish an overland, waterborne, and airborne evacuation plan which considers Special needs Populations and includes a Public Notification System and an identification of staging and landing areas	No	No funding
Continue implementing critical areas development regulations	Yes – these are ongoing efforts	N/A
Study effects of Piper Road landslide on West Loop Road	No	No funding
Identify at least one primary and one alternate meeting place/shelter	No	No funding

Consider strategic down-zoning of areas prone to landslides and seasonal drought (dry domestic wells)	No	No funding
Develop a city-wide land-stabilization and stormwater management plan with special attention on the Piper and Bone Road areas	No	No funding
Modernize and update flood plain maps and flood information	No	No funding; in process with FEMA project

EDUCATION & TRAINING PROJECTS	Accomplished – yes/no	If not accomplished – why?
Support County Sheriff's educational and training efforts on emergency management and response	Yes	N/A
Develop city website to include information on emergency preparedness and response	Yes	N/A
Encourage staff training on hazard mitigation issues	Yes – these are ongoing efforts	N/A

EQUIPMENT PROJECTS	Accomplished – yes/no	If not accomplished – why?
Acquire, improve and/or upgrade rolling stock of vehicles including prows and earthmoving equipment	Yes	N/A
Acquire, improve and/or upgrade back-up generators at city facilities, especially at fire halls	No	No funding

Develop a 'common protocol,' training and standards among Skamania County emergency responders (enhance mutual aid agreements)	Yes – these are ongoing efforts	N/A
Upgrade firefighting personal safety equipment to NFPA standards	Yes – these are ongoing efforts	No funding
Obtain adequate communications equipment.	Yes – City Radio System to UHF; new VOIP phone system; Ciyt Hall and Fire Dept. on broadband; upgrade to water system software enabling monitoring by smartphone	N/A
Achieve communications interoperability	Yes – City Staff moved radio communications to UHF for interoperability with County Roads, Fire Service, and Law Enforcement	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

The City of Stevenson's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

FACILITY &/OR INFRASTRUCTURE PROJECTS

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Remove publicly-owned and repetitive loss buildings from the flood plain	X	X	X	X	X		X		X					Local, HMGP	Facilities
Replace Rock Creek drive bridge with a free-span bridge	X	X	X	X	X	X	X	X	X	X		X	X	Local	Public Works
Construct a multi-agency fire, ambulance, emergency response station in Stevenson	X	X	X	X	X	X	X	X	X	X				Local	Facilities

Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Install water-tight manhole covers in flood-prone areas	—	X	X	—	X	—	—	—	—	X	—	X	—	Local, HMGP	Public Works
Bury all above-ground utilities except in major landslide hazard areas	X	X	X	X	X				X	X	—	X	—	Local, HMGP	Public Works
Establish, improve, and maintain evacuation and response routes	X	X	X	X	X	—	X	X	X	X	—	—	X	Local	Public Works
Connect Iman Springs with the City Water System	—	—	—	—	—	X	—	—	—	—	—	—	X	Local	Public Works
Establish fuel breaks around Stevenson and its evacuation routes	X	—	—	—	—	—	—	—	X	X	—	—	—	Local	Public Works
Move main water-line from West Loop Road to Gropper Road	—	X	—	X	—	X	—	—	—	X	—	—	X	Local	Public Works

Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Improve Kanaka Creek underpass as an evacuation route	X	X	X	X	X	—	—	—	X	—	—	—	—	Local	Public Works
Install evacuation route and other emergency related signage	X	X	X	X	X	—	X	—	X	—	—	—	—	Local	Public Works
Retrofit publically-owned buildings to withstand seismic events	—	X	—	—	—	—	—	—	X	X	—	—	—	Local	Facilities

PLANNING PROJECTS

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Incorporate Hazard Mitigation into existing and future plans and development regulations	X	X	X	X	X	X	X	X	X	X	X	X	X	Local	Building & Planning
Establish an overland, waterborne, and airborne evacuation plan which considers Special needs Populations and includes a Public Notification System and an identification of staging and landing areas	X	X	X	X	X		X	X	X	X		X	X	Local	Building & Planning, DEM
Continue implementing critical areas development regulations	X	X	X	X	X		X	X	X	X		X	X	Local	Building & Planning
Study effects of Piper Road landslide on Wets Loop Road		X	X	X	X				X	X		X	X	Local, HMGP	Building & Planning
Identify at least one primary and one alternate meeting place/shelter	X	X	X	X	X		X	X	X	X		X	X	Local	DEM

Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Consider strategic down-zoning of areas prone to landslides and seasonal drought (dry domestic wells)	X	X		X	X				X	X		X		Local	Building & Planning
Develop a city-wide land-stabilization and stormwater management plan with special attention on the Piper and Bone Road areas		X	X	X	X				X	X		X	X	Local, HMGP	Building & Planning,
Modernize and update flood plain maps and flood information			X	X	X				X	X		X		Local, HMGP	Building & Planning,

EDUCATION & TRAINING PROJECTS

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Support County Sheriff's educational and training efforts on emergency management and response	X	X	X	X	X	X	X	X	X	X		X	X	Local	SCSO, DEM
Encourage staff training on hazard mitigation issues	X	X	X	X	X	X	X	X	X	X		X	X	Local	DEM

EQUIPMENT PROJECTS

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Acquire, improve and/or upgrade rolling stock of vehicles including plows and earthmoving equipment	X	X	X	X	X	X	X	X	X	X		X	X	Local	Public Works
Acquire, improve and/or upgrade back-up generators at city facilities, especially fire halls	X	X	X	X	X	X	X	X	X	X		X	X	Local, HMGP	Public Works
Develop a 'common protocol,' training and standards among Skamania Co. emergency responders (enhance mutual aid agreements)	X	X	X	X	X	X	X	X	X	X		X	X	Local	SCSO, fire agencies
Upgrade firefighting personal safety equipment to NFPA standards	X	X	X	X	X	X	X	X	X	X		X	X	Local, FPSG	Fire agencies
Obtain adequate communications equipment.	X	X	X	X	X	X	X	X	X	X		X	X	Local	SCSO, fire agencies
Achieve communications interoperability	X	X	X	X	X	X	X	X	X	X		X	X	Local	SCSO, fire agencies

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

9 – Support County Sheriff's educational and training efforts on emergency management/response

8 – Establish fuel breaks around Stevenson and its evacuation routes

8 - Incorporate Hazard Mitigation into existing and future plans and development regulations

8 - Encourage staff training on hazard mitigation issues

8 - Develop a 'common protocol,' training and standards among Skamania Co. emergency responders

8 - Consider strategic down-zoning of areas prone to landslides and seasonal drought

7 – Establish, improve, and maintain evacuation and response routes

7 - Identify at least one primary and one alternate meeting place/shelter

7 - Acquire, improve and/or upgrade back-up generators at city facilities, especially fire halls

6 - Study effects of Piper Road landslide on Wets Loop Road

6 - Develop a city-wide land-stabilization and stormwater management plan

6 - Upgrade firefighting personal safety equipment to NFPA standards

6 - Modernize and update flood plain maps and flood information

5 - Remove publicly-owned and repetitive loss buildings from the flood plain

5 - Connect Iman Springs with the City Water System

5 - Continue implementing critical areas development regulations

5 - Obtain adequate communications equipment.

5 - Achieve communications interoperability

5 - Improve Kanaka Creek underpass as an evacuation route

5 - Establish an evacuation plan which considers Special needs

4 - Install water-tight manhole covers in flood-prone areas

4 - Install evacuation route and other emergency related signage

4 - Bury all above-ground utilities except in major landslide hazard areas

4 - Move main water-line from West Loop Road to Gropper Road

3 - Replace Rock Creek drive bridge with a free-span bridge

3 - Construct a multi-agency fire, ambulance, emergency response station

3 - Acquire, improve, upgrade rolling stock of vehicles including plows, earthmoving equipment

2 - Retrofit publically-owned buildings to withstand seismic events

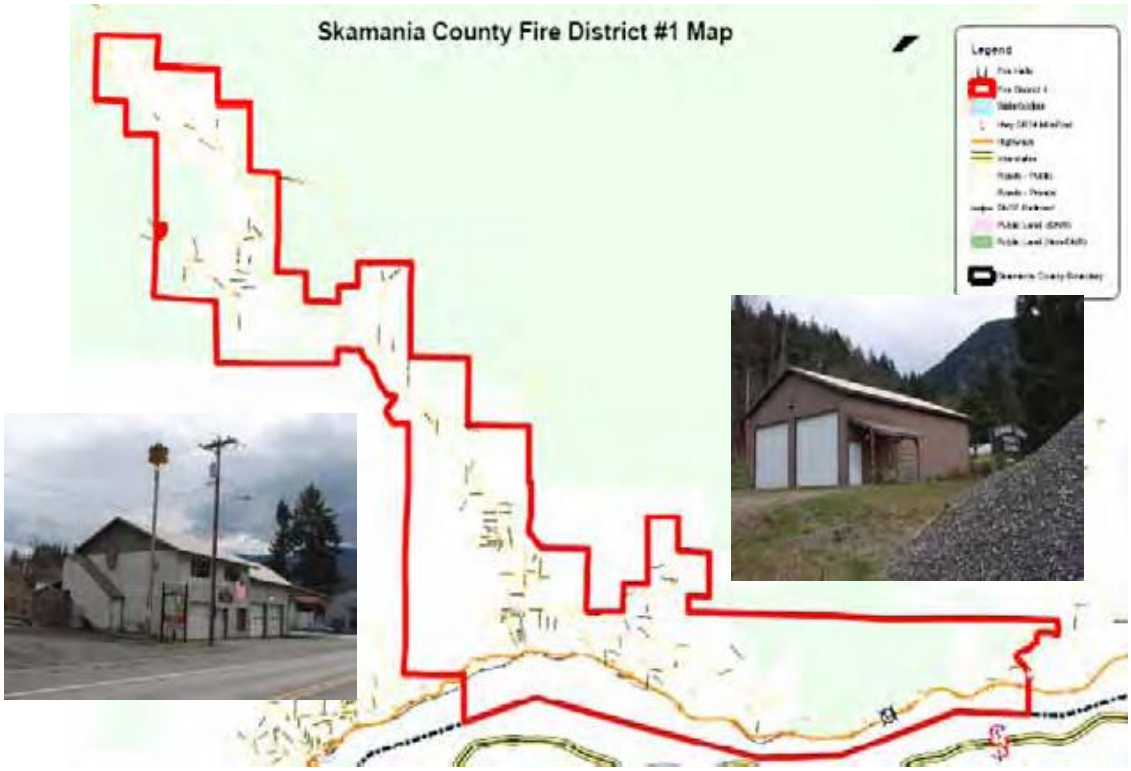
Chapter 7. Skamania County Fire District #1

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Ann Lueders admin@skamaniafire1.com 509.427.8698	

Jurisdiction Profile

- Skamania County Fire District #1 is an “All-Volunteer” Fire Department. The headquarters station is located in Carson. Two other stations are located in Home Valley and Stabler.
- The area serviced by Skamania County Fire District #1 is located in the south-central area of the County as depicted in the map below.



Asset and Resources Profile

Facility and/or Equipment	Value (est.)
(3) Fire Stations (Carson, Home Valley, Stabler)	$ 850,000
(3) Type 1 Engines	$ 820,000
(2) Type 6 Engines	$ 150,000
(1) 1500 Gallon Tender	$ 230,000
(1) 3000 Gallon Tender	$ 170,000
(1) Rescue/Air Rig	$ 180,000
(1) Command Vehicle	$ 20,000
PPE and firefighting equipment	$ 500,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire Department Standard Operating Guidelines
- Mutual Aid Agreements with
    - Skamania Co. Fire Districts #2, #3, #4, #5, and #6
    - The cities of Stevenson, North Bonneville, and Cascade Locks
    - Skamania EMS & Rescue
    - Skamania Co. Sheriff
    - Washington State Patrol
    - Washington DNR
    - USFS Gifford Pinchot National Forest
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Carson	Home Valley	Stabler	Cook
Earthquake	High	Low	Low	Low
Severe Storm	High	High	Medium	High
Flooding	Medium	Low	Low	Low
Wildfire	Low	High	High	High

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community. For the whole jurisdiction of Fire District #1 the two hazards of biggest concern are Severe Storms and Wildfire due to the high occurrence (Severe Storms 75% and Wildfire 50%). Overall earthquakes rank second because of a likely rating of 40% probability but potentially devastating impact to the population and infrastructure. Flooding is of low level concern (with only a medium risk rating in Carson) due to low frequency and low impact. All of the identified hazards are thought to potentially impact housing structures, transportation infrastructure, communications and power transmission lines, and residents' mobility.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Survey all stations and upgrade or replace to seismic code	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the District has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This District's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Survey all stations and upgrade or replace to seismic code		X							X	X				Local, HMGP	Fire District
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture / preventing toppling over during tremors		X							X	X	X		X	Local	Public Works

Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms	X		X						X	X	X		X	Local	Public Works
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X	X	X	Local	Public Works
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding				X	X				X	X	X		X	Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Trim back vegetation to prevent branches breaking powerlines during storms

8 - Develop defensive space around critical infrastructure and district owned building and venues

7 - Review and improve/repair water handling devices/structures ensuring proper drainage

3 - Survey all stations and upgrade or replace to seismic code

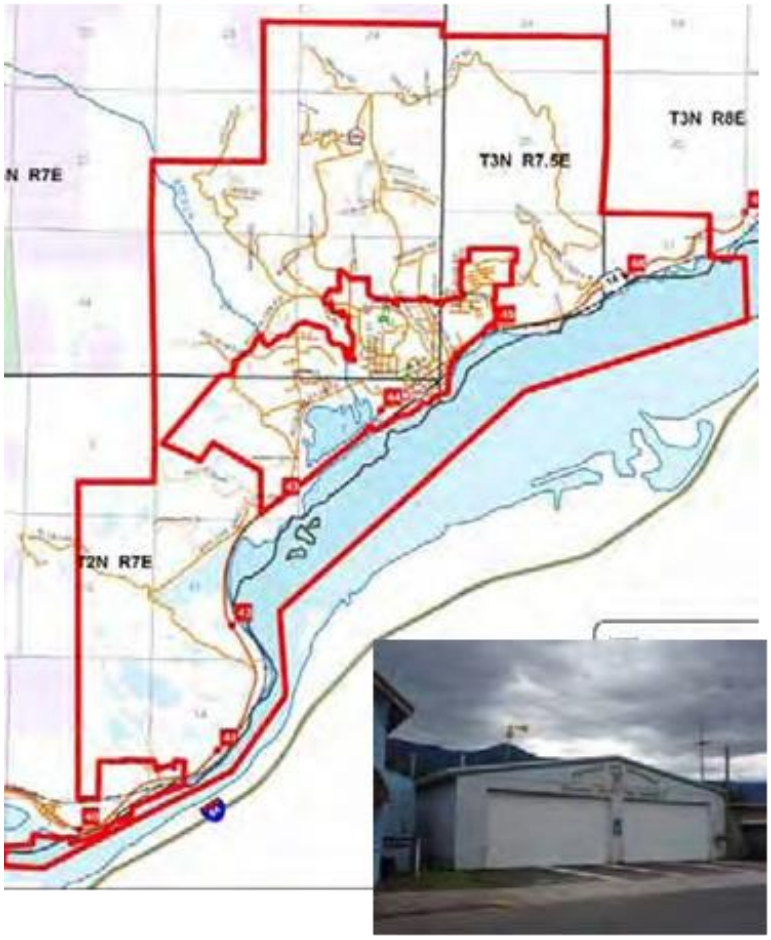
Chapter 8. Skamania County Fire District #2 & Stevenson Fire Dept.

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Rob Farris Fire Chief rob@ci.stevenson.wa.us 509.427.5970	Gordy Rosander Assistant Chief 509.427.5970

Jurisdiction Profile

- For more than sixty (60) years the City of Stevenson Fire Volunteers and the Skamania County District 2 Fire Volunteers have joined together to provide fire prevention and suppression services for the protection of life and property within the City and District boundaries.



Asset and Resources Profile

Facilities and Equipment shared between District #2 and the Stevenson Fire Dept.

Facility and/or Equipment	Value (est.)
Fire Station Land & Improvements	$ 210,000
Equipment and Supplies	$ 290,000

Facilities and Equipment owned by District #2

Facility and/or Equipment	Value (est.)
Satellite Fire Station Land & Improvements	$ 160,000
Equipment and Supplies	$ 200,000

Facilities and Equipment owned by the Stevenson Fire Dept.

Facility and/or Equipment	Value (est.)
Equipment and Supplies	$ 280,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire District #2 and Stevenson Fire Department Standard Operating Guidelines
- Mutual Aid Agreements with
    - Skamania Co. Fire Districts #2, #3, #4, #5, and #6
    - The cities North Bonneville, and Cascade Locks
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
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2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Main Station	Satellite Station
Earthquake	High	Medium
Landslide	Low	High
Severe Storm	Medium	Low
Flooding	Low	Low
Wildfire	Low	Low

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Overall for their jurisdiction, Earthquake and Landslides are of most concern. Not because of the probability of occurrence, but because of vulnerability and the impact on housing structures, transportation infrastructure, communications and power transmission lines. Severe storms are of medium concern due to frequent (60%) occurrence, but lower vulnerability and impact. Of low concern – due to low frequency (30-40%) and low vulnerability and impact – are the hazards Flooding and Wildfire.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Develop plans and establish a new facility to house Fire, EMS, SAR, Sheriff's Office, and Emergency Management	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), Fire District #2 / Stevenson Fire Department has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop plans and establish a new facility to house Fire, EMS, SAR, Sheriff's Office, and DEM	X	X	X	X	X	X	X	X	X	X			X	Local, HMGP	Fire District
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture / preventing toppling over during tremors		X							X	X	X		X	Local	Public Works

Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X	X				X	X	X	X	X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Public Works
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding					X				X	X	X		X	Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Trim back vegetation to prevent branches breaking powerlines during storms

7 - Review and improve/repair water handling devices/structures ensuring proper drainage

5 - Stabilize any slide-prone locations in areas under the District’s/Department’s responsibility

3 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

2 - Develop plans and establish a new facility to house Fire, EMS, SAR, Sheriff’s Office, and DEM

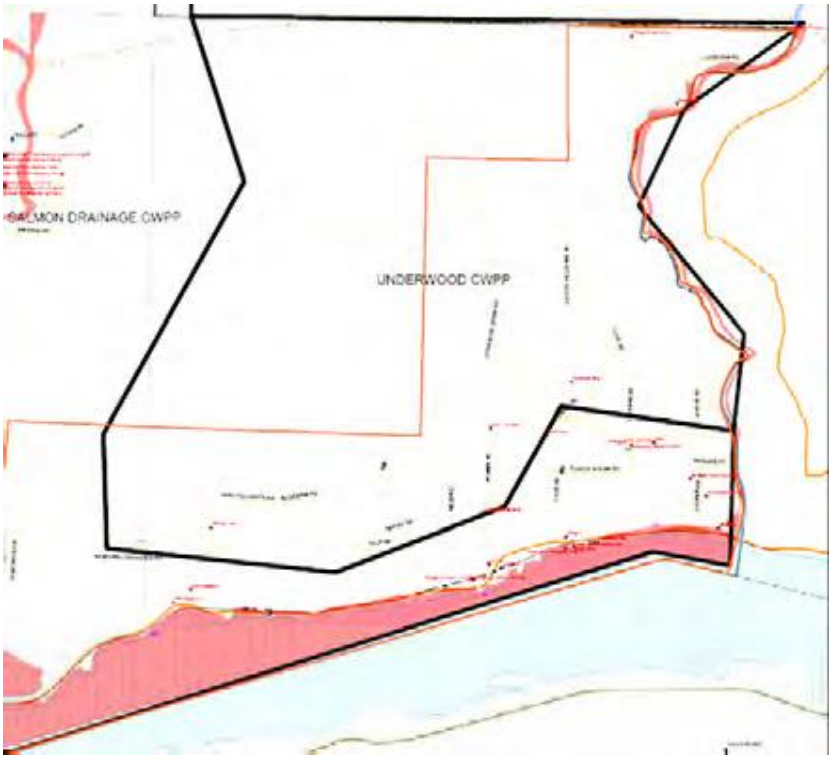
Chapter 9. Skamania County Fire District #3

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Ryan Kreps aaron@artisticx.com 509.493.1700	

Jurisdiction Profile

- Skamania County Fire District #3 is an “All-Volunteer” Fire Department. The headquarters station is located on Cook Underwood Road in Underwood.
- The area serviced by Skamania County Fire District #3 is in the southeast corner of the County as depicted in the map below.
- In 2020, the volunteer firefighters of Skamania County Fire District #3 responded to 10 calls for service which shows and increasing trend over the recent years.



Asset and Resources Profile

Facility and/or Equipment	
Fire Station	(17) sets wildland PPE
(1) Type 1 structural engine	(9) compliant structural PPE
(1) Type 2 structural engine	(7) UHF & VHF radios (one per vehicle)
(1) Type 3 wildland engine	(8) portable VHF
(1) Type 5 wildland engine	pumps
(1) Type 7 wildland engine	tanks
(1) Type 2 tender	600' 4" hose
(1) Type 3 tender	

All equipment and trucks are insured with a private company. Klickitat Co. Fire Districts Pool.

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire Department Standard Operating Guidelines
- Mutual Aid Agreements with Mill A, Husum, and White Salmon fire departments
- Skamania County Comprehensive Emergency Management Plan (CEMP)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	

2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Wildfire	High	High	High
Severe Storm	High	High	High
Earthquake	High	High	High

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Wildfire, Severe Storm, and Earthquake are the major concerns to the Fire District. It is believed that while Severe Storm and Wildfire have a higher probability of occurrence (80% and 50% respectively), the vulnerability and impact of earthquake exceeds that of the other two listed hazards. Potentially affected by all three hazards are housing structures, transportation infrastructure, communications and power transmission lines.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Upgrade to radio communications equipment to comply with P-25 standards	No	No funding source found
Install a "Reader Board" in front of the fire station for information to the public	No	No funding source found
Construction of a helipad for Life Flight	Yes	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Upgrade to radio communications equipment to comply with P-25 standards	X	X	X	X	X		X	X	X	X				Local	FD#3
Install a “Reader Board” in front of the fire station for information to the public	X	X	X	X	X	X	X	X	X	X		X	X	Local	FD#3
Develop defensive space around critical infrastructure and district owned buildings	X								X	X	X		X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Public Works
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned buildings

7 - Trim back vegetation to prevent branches breaking powerlines during storms

3 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

3 - Upgrade to radio communications equipment to comply with P-25 standards

3 - Install a “Reader Board” in front of the fire station for information to the public

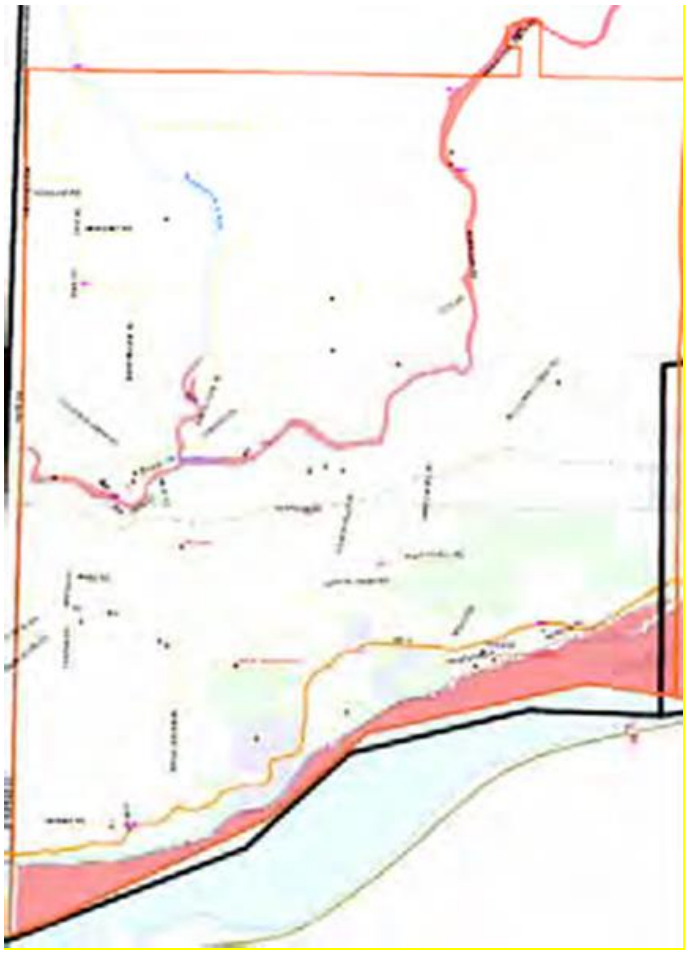
Chapter 10. Skamania County Fire District #4

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Chris Fuller Cfullerscfd4@gmail.com 360.837.3420	

Jurisdiction Profile

- Skamania County Fire District #4 is an “All-Volunteer” Fire Department in the southwest corner of Skamania County. There is a headquarters station and a satellite station, both along the Washougal River.



Asset and Resources Profile

Facility and/or Equipment	Value (est.)
(2) Fire Stations	$ 2,060,000
Misc. Equipment	$ 510,000
Misc. Supplies	$ 90,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire District #4 Standard Operating Guidelines
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	

2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Risk Rating
Wildfire	High
Flooding	Medium
Landslides	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
The Fire District is mostly concerned about Wildfires. Their frequency of occurring in the area are high (50+%) and due to the high vulnerability the impact is significant. Flooding and Landslides occur (<50%) in combination with winter weather and vulnerability and impact are medium. Each of the hazards affect housing structures, transportation infrastructure, communications and power transmission lines, and residents' mobility.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Conduct an emergency communication / notification and evacuation drill based on wildfire or other natural hazard incident	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the District has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	Public Works
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X	X				X	X	X		X	Local	Public Works
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding					X				X	X	X		X	Local	Public Works

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

6 - Review and improve/repair water handling devices/structures ensuring proper drainage

5 - Stabilize any slide-prone locations in areas under the District's/Department's responsibility

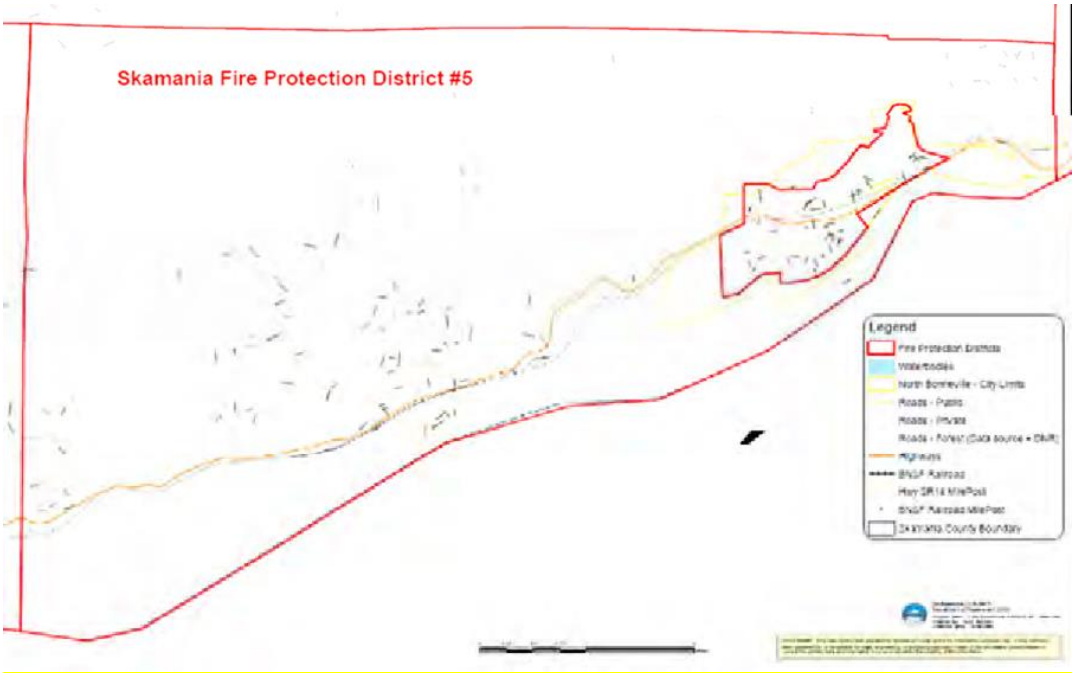
Chapter 11. Skamania County Fire District #5

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Shane Cornish admin@skamaniafire5.com 509.427.8698	

Jurisdiction Profile

- Skamania County Fire District #5 is an “All-Volunteer” Fire Department serving the area depicted below with the exception of the City of North Bonneville which has its own fire department.



Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire District #5 Standard Operating Guidelines
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	

1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Risk Rating
Landslide	High
Earthquake	Medium
Severe Storm	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
For their jurisdiction, Fire District #5 sees Landslides as the largest risk due to the high occurrence (50+%) of weather triggered slides and the disruption they cause to transportation, communications, and power infrastructure. Vulnerability and impact are high for that hazard. While the occurrence of an earthquake has less probability, the vulnerability is high. Severe Storms happen often (50+%) have some Landslides associated with it, but do not have such a large impact in the jurisdiction.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Resolve radio communications issues caused by repeater locations	No	No funding source found
Upgrade communications radios	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Resolve radio comm issues caused by repeater locations	X	X	X	X	X		X	X	X	X				Local	Fire District
Upgrade comm radios	X	X	X	X	X		X	X	X	X				Local	Fire District
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X					X	X	X		X	Local	Public Works
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Resolve radio comm issues caused by repeater locations

5 - Upgrade comm radios

4 - Stabilize any slide-prone locations in areas under the District’s/Department’s responsibility

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

4 - Trim back vegetation to prevent branches breaking powerlines during storms

Chapter 12. Skamania County Fire District #6

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Frank Yela Franklin.yela@gmail.com 509.427.8698	

Jurisdiction Profile

- Skamania County Fire District #6 is an “All-Volunteer” Fire Department located in the northwest corner of Skamania County and serving the area around the east end of Swift Reservoir as depicted here below.

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Fire District #6 Standard Operating Guidelines
- Mutual Aid Agreements with all Skamania County Fire Districts/Departments and Cowlitz-Skamania Fire District #7
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	

1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Risk Rating
Volcano	High
Wildfire	High
Severe Storm	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Due to the proximity to Mt. St. Helens, the District sees the volcano as one of three biggest hazard. While the frequency of occurrence is historically low (way less than 50%), vulnerability and impact could be very high. Due to the jurisdiction's far north exposure, vulnerability to Wildfires and thus impact is high. Also, Wildfires have become more frequent (50+%) and more severe and thus would have a high impact. All three hazards would impact transportation routes, some of the housing on the southeast end of Swift Reservoir, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Reduce ground fuel and develop fire break on south side of Swift Reservoir	No	No funding source found
Red card training with Washington DNR	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Reduce ground fuel and develop fire break on south side of Swift Reservoir	X					X	X		X	X				Local	Fire District
Red card training with Washington DNR	X						X		X	X				Local	Fire District
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms			X	X					X	X	X		X	Local	Public Works

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Red card training with Washington DNR

5 - Reduce ground fuel and develop fire break on south side of Swift Reservoir

Chapter 13. Mill A Fire Department

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Chief Sacon neal@sacon.net 509.427.8698	

Jurisdiction Profile

- Mill A Fire is the primary fire protection and suppression agency for the Little White Salmon River valley, with stations in Mill A and Willard. The fire department is owned and operated by Mill A Volunteers, a 501(c) (3) public charity formed in 1983.

- The Mill A Fire Department has a main station in Mill at on State Highway 14 and one satellite station in Willard.

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Mill A Fire Department's Standard Operating Guidelines
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire Department's jurisdiction and the Department adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Risk Rating
Wildfire	High
Earthquake	High
Severe Storm	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Of the three identified hazards of significance, the Mill A Fire Dept. is most concerned about Wildfire due to its quite frequent occurrence (50+%) in recent years and the vulnerability of the jurisdiction. Earthquake, while a less frequent (<30%) occurrence is ranked high on the risk table because of its impact and the vulnerability of the jurisdiction. Severe Storms are more severe and frequent in the western part of Skamania County compared to the extreme eastern portion and therefore vulnerability and impact are much less here. All three hazards would impact transportation routes, some of the housing on the southeast end of Swift Reservoir, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Upgrade equipment to NFPA standards and train volunteer firefighters on these standards	No	No funding source found
Annual wildfire refresher training	No	No funding source found
Vehicle upgrades, i.e., Type III & IV tenders and Rapid Response Engines	No	No funding source found

Acquire additional UHF portable radios, portable pumps, nylon jacketed hose, additional folding tanks	No	No funding source found
Need modern vehicle storage facilities for equipment & training in Little White Salmon drainage and wildfire area	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Upgrade equipment to NFPA standards and train to these standards	X	X	X	X	X	X	X	X	X	X				Local	Fire District

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Annual wildfire refresher training	X								X	X		X		Local	Fire District
Vehicle upgrades, i.e., Type III & IV tenders and Rapid Response Engines	X	X	X	X	X	X	X	X	X	X		X		Local, FPSG	Fire District
Acquire UHF portable radios, portable pumps, nylon jacketed hose, folding tanks	X	X	X	X	X	X	X	X	X	X		X		Local	Fire District
Vehicle storage for equipment & training in Little White Salmon drainage & wildfire area	X	X	X	X	X	X	X	X	X	X		X		Local, FPSG	Fire District

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	Fire District
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Fire District
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Fire District

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

6 - Annual wildfire refresher training

7 - Trim back vegetation to prevent branches breaking powerlines during storms

5 - Upgrade equipment to NFPA standards and train to these standards

4 - Acquire UHF portable radios, portable pumps, nylon jacketed hose, folding tanks

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

3 - Vehicle upgrades, i.e., Type III & IV tenders and Rapid Response Engines

2 - Vehicle storage for equipment & training in Little White Salmon drainage & wildfire area

Chapter 14. North Bonneville Fire Department

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Glen Bell Fire Chief pbell@northbonneville.net 509.427.5235	Gregg Johnson Assistant Chief gregg@northbonneville.net 509.427.5235

Jurisdiction Profile

- The North Bonneville Fire Department is an "All-Volunteer" Fire Department and serves the City of North Bonneville.

Asset and Resources Profile

Facility and/or Equipment	Value (est.)
Fire Station	$ 429,000
Misc. Equipment	$ 538,000
Misc. Supplies	$ 76,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Mill A Fire Department's Standard Operating Guidelines
- Mutual Aid Agreement with Stevenson Fire Department and Skamania Fire District #5
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

Fire Commissioners have routinely considered the HIVA and the Hazard Mitigation Plan when making decision on planned repairs, enhancement, improvements of facilities and operations to ensure hazard mitigation efforts are taken into consideration. This practice will continue using this updated Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Fire Department's jurisdiction and the Department adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The risk rating has been identified by geographical subarea of the fire district:

Hazard	Risk Rating
Wildfire	High
Earthquake	High
Severe Storm	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.

Of the three identified hazards of significance, the Mill A Fire Dept. is most concerned about Wildfire due to its quite frequent occurrence (50+%) in recent years and the vulnerability of the jurisdiction. Earthquake, while a less frequent (<30%) occurrence is ranked high on the risk table because of its impact and the vulnerability of the jurisdiction. Severe Storms are more severe and frequent in the western part of Skamania County compared to the extreme eastern portion and therefore vulnerability and impact are much less here. All three hazards would impact transportation routes, some of the housing on the southeast end of Swift Reservoir, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Wildland Red Card training	No	No funding source found
Upgrade to water tender, wildland gear, water bladders, fire shelters	No	No funding source found
Upgrade radio communications equipment, i.e., P-25 radios for vehicles	No	No funding source found
Acquire outdoor signage board to warn the public and advertise outreach programs	No	No funding source found
Acquire small wildfire vehicle	No	No funding source found
Acquire boat(s) for flooding evacuation	No	No funding source found

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	Public Works
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Public Works
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Public Works
Wildland Red Card training	X								X	X				Local	Fire Dept
Upgrade to water tender, wildland gear, water bladders, fire shelters	X								X	X				Local	Fire Dept

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Upgrade radio communications equipment, i.e., P-25 radios for vehicles	X	X	X	X	X		X	X	X	X				Local	Fire Dept
Acquire outdoor signage board to warn the public and advertise outreach programs	X	X	X	X	X	X	X	X	X	X			X	Local	Fire Dept
Acquire small wildfire vehicle	X								X	X				Local	Fire Dept
Acquire boat(s) for flooding evacuation					X				X	X				Local	Fire Dept

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Wildland Red Card training

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

4 - Upgrade to water tender, wildland gear, water bladders, fire shelters

4 - Upgrade radio communications equipment, i.e., P-25 radios for vehicles

3 - Acquire outdoor signage board to warn the public and advertise outreach programs

2 - Acquire small wildfire vehicle

2 - Acquire boat(s) for flooding evacuation

Chapter 15. Mill A School District #31

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Bob Rogers Superintendent BRogers@MillASchool.org 509.538.2522	Carrie Gwynne Business Manager CGwynne@MillASchool.org 509.538.2522

Jurisdiction Profile

- The Mill A School District is guided by a five-member Board of elected Directors. This Board is the final authority on all matters concerning the District (RCW 28A.320.015)
- Geographically, this very small, sparsely populated District is located it the most southeastern corner of Skamania County, close to the county line with Klickitat County.
- The District serves 50 (+/-) students from Kindergarten through 8th grade.

Asset and Resources Profile

The District owned, operated, and maintained assets and resources include:

School Facilities	Building Value (est.)	Equipment Value (est.)	Total Value (est.)
Mill A Elementary School	$ 3,300,000	$ 500,000	$ 3.8 M

Applicable Regulations and Plans

- The Mill A School District, like all Washington State K-12 schools, is regulated according to the Revised Code of Washington (RCW) – such as Title 28A - and by the Washington Administrative Codes (WAC) – such as Title 51 - which are rules put in place to enact applicable legislation.
- Policies, plans, procedures, and protocols of the State's Office of Public Instruction (OSPI) and the Mill A School District #2
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

In the past ten years, School Board decisions involving the planning of repairs, enhancement, improvements of facilities and operations have taken the HIVA and the Hazard Mitigation Plan into consideration and they will continue to do so in the future following the now updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the School District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Landslide	High	High	High
Severe Storm	Medium	High	High
Wildfire	Medium	High	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
The School District ranks Landslides as the hazard of the highest significance (50%) due to a high probability of occurring, high vulnerability and therefore also its impact on transportation routes and power/communications infrastructure. Their concerns about Severe Storm and Wildfire are of medium significance because of a lesser probability (<50%), however impact on transportation routes, housing and structures, and power/communications infrastructure is potentially still significant.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Update/maintain Emergency Plans and conduct drills on a regular basis	Yes	N/A
Ensure adequate water and food supplies are available if sheltering in place	Yes	N/A
Prepare defensible space around facilities against wildfire hazard	Yes	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	School Dist
Develop defensive space around critical infrastructure and district owned building	X								X	X	X	X	X	Local	School Dist
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	School Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Update/maintain Emergency Plans and conduct drills on a regular basis	X	X	X	X	X		X	X	X	X			X	Local	School Dist
Ensure adequate water and food supplies are available if sheltering in place	X	X	X	X	X		X	X	X				X	Local	School Dist
Implement ongoing Firewise program	X								X	X			X	Local	School Dist
Continuous road maintenance to prevent landslides		X	X	X	X				X	X		X	X	Local	School Dist

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building
8 - Update/maintain Emergency Plans and conduct drills on a regular basis
7 - Ensure adequate water and food supplies are available if sheltering in place
7 - Trim back vegetation to prevent branches breaking powerlines during storms
6 - Implement ongoing Firewise program
5 - Continuous road maintenance to prevent landslides
4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

Chapter 16. Mount Pleasant School District #029-931

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Ray Griffin Superintendent Ray.Griffin@mtpleasantschool.org 360.835.3371	Marcy Harness Office Manager marcy.harness@mtpleasantschool.org 360.835.3371

Jurisdiction Profile

- The Mount Pleasant School District is guided by a five-member Board of elected Directors. This Board is the final authority on all matters concerning the District (RCW 28A.320.015)
- Geographically, this small, sparsely populated District is located it the most southwestern corner of Skamania County, close to the county line with Clark County.
- The District serves 60+ students from Kindergarten through 8th grade in the Skamania Elementary School (K-8).

Asset and Resources Profile

The District owned, operated, and maintained assets and resources include:

School Facilities	Building Value (est.)	Equipment Value (est.)	Total Value (est.)
Mount Pleasant School	$ 800,000	$ 200,000	$ 1.0 M

Applicable Regulations and Plans

- The Mount Pleasant School District, like all Washington State K-12 schools, is regulated according to the Revised Code of Washington (RCW) – such as Title 28A - and by the Washington Administrative Codes (WAC) – such as Title 51 - which are rules put in place to enact applicable legislation.
- Policies, plans, procedures, and protocols of the State's Office of Public Instruction (OSPI) and the Mount Pleasant School District #2
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

In the past ten years, School Board decisions involving the planning of repairs, enhancement, improvements of facilities and operations have taken the HIVA and the Hazard Mitigation Plan into consideration and they will continue to do so in the future following the now updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the School District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Severe Storm	High	High	High
Earthquake	Medium	High	High
Wildfire	Medium	High	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Severe Storms are the hazard the school district is mostly concerned about due to its high (>50%) probability and impact on the community. Less probability for Earthquake and Wildfire (<40% each) ranks these hazards next, whereby Earthquake is considered more impactful than Wildfire. Although, all three hazards would impact the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Update/maintain Emergency Plans and conduct drills on a regular basis	Yes	N/A
Continuously update parent call-down list	Yes	N/A
Ensure Flash News Network is functional and staff knows how to use it	Yes	N/A
Ensure adequate water and food supplies are available if sheltering in place	Yes	N/A
Secure – earthquake proof – inside fixtures and equipment	No	No funding
Secure outside fixtures and replace gutter system	Yes	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Update / maintain Emergency Plans and conduct drills on a regular basis	X	X	X	X	X		X	X	X	X			X	Local	School Dist
Continuous update of parent call-down list	X	X	X	X	X		X	X	X				X	Local	School Dist
Ensure Flash News Network is functional and staff knows how to use it	X	X	X	X	X		X	X	X					Local	School Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	School Dist
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	School Dist
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X	X	X	Local	School Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Ensure adequate water and food supplies are available if sheltering in place	X	X	X	X	X		X	X	X				X	Local	School Dist
Secure – earthquake proof – inside fixtures and equipment		X							X	X				Local	School Dist

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

8 - Update / maintain Emergency Plans and conduct drills on a regular basis

8 - Develop defensive space around critical infrastructure and district owned building and venues

8 - Ensure adequate water and food supplies are available if sheltering in place

8 - Continuous update of parent call-down list

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Ensure Flash News Network is functional and staff knows how to use it

6 - Secure – earthquake proof – inside fixtures and equipment

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

Chapter 17. Skamania School District #2

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Ralph Pruitt Superintendent rpruitt@skamania.k12.wa.us 509.427.8239	Amber Warren Main Line awarren@skamania.k12.wa.us 509.427.8239

Jurisdiction Profile

- The Skamania School District is guided by a five-member Board of elected Directors. This Board is the final authority on all matters concerning the District (RCW 28A.320.015)
- Geographically, the District is located just west of the City of North Bonneville and stretches narrowly from the shore of the Columbia River north past Mt. St. Helens and Spirit Lake to the county line.
- The District serves between 60 and 80 students from Kindergarten through 8th grade in the Skamania Elementary School (K-8).

Asset and Resources Profile

The District owned, operated, and maintained assets and resources include:

School Facilities	Building Value (est.)	Equipment Value (est.)	Total Value (est.)
Skamania Elementary School	$ 900,000	$ 500,000	$ 1.4 M

Applicable Regulations and Plans

- The Skamania School District #2, like all Washington State K-12 schools, is regulated according to the Revised Code of Washington (RCW) – such as Title 28A - and by the Washington Administrative Codes (WAC) – such as Title 51 - which are rules put in place to enact applicable legislation.
- Policies, plans, procedures, and protocols of the State's Office of Public Instruction (OSPI) and the Skamania School District #2
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

In the past ten years, School Board decisions involving the planning of repairs, enhancement, improvements of facilities and operations have taken the HIVA and the Hazard Mitigation Plan into consideration and they will continue to do so in the future following the now updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the School District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Severe Storm	High	High	High
Wildfire	High	Medium	High
Earthquake	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
The school district is mostly concerned about Severe Storms due to its high (>60%) probability and impact on the community. Less yest still high probability of occurrence of Wildfire (50% each) ranks this hazard next, whereby Earthquake is considered less probable (<30%) than Wildfire. Although, all three hazards could severely impact the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Update/maintain Emergency Plans and conduct drills on a regular basis	Yes	N/A
Continuously update parent call-down list	Yes	N/A
Ensure Flash News Network is functional and staff knows how to use it	Yes	N/A
Ensure adequate water and food supplies are available if sheltering in place	Yes	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	School Dist
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	School Dist
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	School Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Update/maintain Emergency Plans and conduct drills on a regular basis	X	X	X	X	X		X	X	X	X			X	Local	School Dist
Continuously update parent call-down list	X	X	X	X	X		X	X	X				X	Local	School Dist
Ensure Flash News Network is functional and staff knows how to use it	X	X	X	X	X		X	X	X					Local	School Dist
Ensure adequate water and food supplies are available if sheltering in place	X	X	X	X	X		X	X	X				X	Local	School Dist

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

8 - Update/maintain Emergency Plans and conduct drills on a regular basis

8 - Continuously update parent call-down list

8 - Ensure adequate water and food supplies are available if sheltering in place

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Ensure Flash News Network is functional and staff knows how to use it

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

Chapter 18. Stevenson-Carson School District #303

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Ingrid Colvard Superintendent colvardi@scsd303.org 509.427.5674	Kathy McKee Business Manager mckeek@scsd303.org 509.427.5674

Jurisdiction Profile

- The Stevenson-Carson School District #303 is guided by a five-member Board of elected Directors. This Board is the final authority on all matters concerning the District (RCW 28A.320.015)
- The District serves the cities/towns of Stevenson, North Bonneville, Carson, Stabler, and Home Valley and extends 15 miles east to west and as far as 50 miles north of the Columbia River.
- Geographically, the District is one of the largest in the State and is the largest timber district in the State.
- The District serves over 1,300 students from Kindergarten through 12th grade in Stevenson Elementary (K-2), Carson Elementary (3-6), Wind River Middle School (7-9), and Stevenson High School (9-12).

Asset and Resources Profile

The District owned, operated, and maintained assets and resources include:

School Facilities	Building Value (est.)	Equipment Value (est.)	Total Value (est.)
Stevenson Elementary School, Stevenson	$ 5.3 M	$ 0.7 M	$ 6.0 M
Carson Elementary School, Carson	$ 6.7 M	$ 0.8 M	$ 7.5 M
Wind River Middle School, Carson	$ 7.3 M	$ 1.0 M	$ 8.3 M
Stevenson High School, Stevenson	$ 11.0 M	$ 1.5 M	$ 12.5 M

Applicable Regulations and Plans

- The Stevenson-Carson School District #303, like all Washington State K-12 schools, is regulated according to the Revised Code of Washington (RCW) – such as Title 28A - and by the Washington Administrative Codes (WAC) – such as Title 51 - which are rules put in place to enact applicable legislation.
- Policies, plans, procedures, and protocols of the State's Office of Public Instruction (OSPI) and the Stevenson-Carson School District #303
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

In the past ten years, School Board decisions involving the planning of repairs, enhancement, improvements of facilities and operations have taken the HIVA and the Hazard Mitigation Plan into consideration and they will continue to do so in the future following the now updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	

1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the School District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Earthquake	Medium	High	High
Severe Storm	High	Medium	High
Wildfire	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
An Earthquake is the highest concern for this school district less so for the probability of occurring (<50%), but for the community's vulnerability and the impact of the hazard. Severe Storms occurring frequently (>50%) find the community better prepared than for an earthquake, but the overall risk is still high. Wildfire remains a concern at medium probability (<50%) with average vulnerability and a medium risk rating. All three hazards, however, could severely impact the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Secure fixtures, furniture, and equipment inside all facilities (earthquake proofing)	Yes	N/A
Update/maintain Emergency Plans and conduct drills on a regular basis	Yes	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	School Dist
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	School Dist
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X	X	X	Local	School Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Ensure fixtures, furniture, equipment inside all facilities are earthquake proofed		X							X	X		X		Local	School Dist
Update & maintain Emergency Plans; conduct drills regularly	X	X	X	X	X		X	X	X	X			X	Local	School Dist

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

8 - Update & maintain Emergency Plans; conduct drills regularly

7 - Trim back vegetation to prevent branches breaking powerlines during storms

5 - Ensure fixtures, furniture, equipment inside all facilities are earthquake proofed

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

Chapter 19. Home Valley Water District

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Melissa Phillips Exec. Secretary homevalleywater@hotmail.com 509.427.9647	

Jurisdiction Profile

- The Home Valley Water District serves over 300 improved parcels and 140 customers just southeast of Carson.
- The Districts water plant is located on Bylon Road in Home Valley and has four water towers for water storage.

Applicable Regulations and Plans

- Washington State's regulations pertaining to Public Utility Districts (e.g., Title 80 RCW, Title 480 WAC, Title 246-290)
- Policies, procedures, and protocols of Home Valley Water District
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

The Board members of the Home Valley Water District ensure that planning any repairs or improvements to the facilities and operational equipment include a review of pertinent sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Water District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Landslide	Medium	High	High
Drought	Medium	Medium	Medium
Earthquake	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
For this water district Landslides are the hazard of highest concern due its infrastructure's high vulnerability and its possible collateral consequence of Severe Storms which occur frequently (50%). Drought, causing supply problems, happened infrequently (<50%) as would earthquakes (30%) and the district feels that their vulnerability and risk should be considered average. Though, all three hazards, however, could severely impact the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Identify alternate water source(s) by surveying, drilling, and/or water rights negotiations	NO	Lack of funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X					X	X	X		X	Local	Public works

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Public works
Identify alternate water source(s) by surveying, drilling, and/or water rights negotiations	X	X	X	X	X				X	X		X		Local	Water District

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

5 - Stabilize any slide-prone locations in areas under the District’s/Department’s responsibility

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

4 - Identify alternate water source(s) by surveying, drilling, and/or water rights negotiations

Chapter 20. Stevenson Community Library & Bookmobile

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
David Wyatt Branch Manager dwyatt@fvrl.org 509.427.5471	Dave Josephson Facilities & Fleet Director djosephson@fvrl.org 360.356.6104

Jurisdiction Profile

- The Stevenson Community Library is part of the Fort Vancouver Regional Libraries (Fort Vancouver Regional Library District formed in 1952).
- The Fort Vancouver Regional Libraries including the Stevenson Community Library are overseen by a Board of Trustees and an Administrative Team.
- The Fort Vancouver Regional Libraries are guided by a set of policies that extend to the Stevenson Community Library as well.
- In 2020, the Library had a circulation of 37,180 and 10,995 visits to the Library. 27 different programs were offered which were attended by 393 patrons. The Library also fielded and answered 949 reference questions.
- The Skamania County Bookmobile stationed in Stevenson serves the rural Skamania County, the City of North Bonneville, and western Klickitat County.

Asset and Resources Profile

The Library owned, operated, and maintained assets and resources include:

Facilities and Equipment	Location	Total Value (est.)
Stevenson Community Library Building	Stevenson	$ 2,121,800
The Library's other property	Stevenson	$ 400,848
Skamania Co. Bookmobile	Stevenson	$ 250,000

Applicable Regulations and Plans

- Washington State's regulations pertaining to Public Libraries and Library Districts (e.g., Chapter 27.12 RCW)
- Policies, procedures, and protocols of the Fort Vancouver Regional Library District

- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

The Stevenson Community Library is part of the Fort Vancouver Regional Libraries. The Board of Trustees and the members Administration/Management of the Fort Vancouver Regional ensure that planning any repairs or improvements to the Stevenson Library facilities include a review of relevant sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	
1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Library District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Severe Storm	High	Medium	High
Landslide	Medium	High	High
Wildfire	Medium	High	High

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
Severe Storms are the hazard the school district is mostly concerned about due to its high (>50%) probability and impact on the community. Less probability for Landslides and Wildfire (<40% each) ranks these hazards next, whereby Landslides is considered more impactful than Wildfire. Although, all three hazards would impact the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Establish emergency water supply(-ies) on each floor of the Library	Yes	N/A
Monitor conditions on and around south driveway & maintain vegetation control to prevent erosion	Yes - ongoing	N/A
Initiate a fire safety evaluation of the facility using the "Firewise" protocols	Yes - ongoing	N/A

Place emergency drinking water supply and first aid kit on Bookmobile	Yes	N/A
Install GPS/On-Star type equipment on Bookmobile (in case of emergency)	No	No funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Public Works
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X					X	X	X		X	Local	Public Works

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and library owned building and venues	X								X	X	X		X	Local	Public Works
Vegetation control to prevent erosion on south driveway	X	X	X	X	X					X		X		Local	Library
Fire safety evaluation of Library using the Firewise protocols	X								X	X				Local	Library

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Emergency drinking water supply and first aid kit on Bookmobile	X	X	X	X	X		X	X	X					Local	Library
Install GPS or On-Star type equipment on Bookmobile in case of emergency	X	X	X	X	X		X	X	X	X				Local	Library

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

9 - Emergency drinking water supply and first aid kit on Bookmobile

8 - Develop defensive space around critical infrastructure and library owned building and venues

7 - Vegetation control to prevent erosion on south driveway

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Fire safety evaluation of Library using the Firewise protocols

6 - Install GPS or On-Star type equipment on Bookmobile in case of emergency

5 - Stabilize any slide-prone locations in areas under the District's/Department's responsibility

Chapter 21. Port of Skamania County

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Doug Bill Facilities Manager doug@portofskamania.org 509.427.5484	Dave Kuhn Facilities Specialist doug@portofskamania.org 509.427.5484

Jurisdiction Profile

- The Port owns 187 acres in Stevenson, North Bonneville and Carson including approximately 30,000 square feet of commercial space and 120,000 square feet of industrial use space.
- Public access to recreational opportunities is an important priority for the Port. The Port owns and maintains approximately 6 acres of parkland with 1.5 miles of waterfront in Stevenson, and has developed 1.1 miles of walking paths with interpretive signs and amenities. A newly constructed exterior restroom at Bob's Beach for easy public access. Shoreline mitigation has added 2.2 acres of shoreline.
- The Stevenson Landing dock, parks, beaches, and boat launch ramp facilities draw a variety of watersport enthusiasts and tourists helping to invigorate the local economy
- Currently 35 businesses are located at the Port employing over 300 people either directly or indirectly.
- The Port of Skamania foresees continued development of Commercial and Industrial space from 2020 through 2025, with a potential addition of another 20,000 to 100,000 square feet of available space. It is expected that most of this expansion will occur in North Bonneville in the Cascades Business Park property or potentially on the Commercial Lot located in Stevenson at 21, 126 & 128 SW Cascade Avenue.

Asset and Resources Profile

Critical facilities, assets, and resources owned by the Port in the **City of Stevenson** are:

Building/Site/Tenant	Address	Value
Underwater Land (east of pier)	Columbia River	$ 3,500
Underwater Land (west of pier)	Columbia River	$ 7,000
Stevenson Landing Pier (property leased)	Russell Street	$ 2,058,062
Vacant Lot	Cascade/Leavens	$ 85,092

Vacant Lot	126 SW Cascade Ave	$ 160,000 + $ 149,367 $ 309,367
Vacant Lot	128 SW Cascade Ave	$ 160,000
Vacant Lot	21 Cascade Ave	$ 180,000
Old Saloon	130 SW Cascade Ave	$ 375,000 + $ 223,446 $ 498,446
Waterfront Pathway	Vacated Front Street	$ 10,000*
Waterfront Pathway	Vacated Front Street	$ 8,000*
Waterfront Pathway	Vacated Front Street	$ 8,000*
Teo Park	152 SW Cascade Ave	$ 330,000* + $ 73,920 $ 403,920
Bob's Beach	206 SW Cascade Ave	$ 240,000* + $ 22,040 $ 262,040
Tichenor Building – includes: Skamania Acupuncture, Skunk Brothers Distillery Inc., WAVE, Phloem, Backwoods Brewing, People For People, CRG Ventures, Atlas Therapeutic Massage, PCT / Anna Peterson, All is One, Vigilize Relaxing, Jessica Webb, Eli Lewis, Walking Man Brewing	40 SW Cascade Ave	$ 687,078 + $ 2,994,346 $ 3,681,424
Walking Man Brewing	26/28/30 SE Cascade Ave	$ 1091132 + $ 3,334,826
Red Barn, Port Shop / Wave	11 SW Cascade Ave	$ 81,928 + $ 237,738
East Point Kite Beach	60 SE Cascade Ave	$ 100,000*
Slaughterhouse Point	Skamania County	$ 10,000*
Pebble Beach	Skamania County	$ 450,000*
Boat Launch Area	SE Cascade Ave	$ 155,590 + $ 239,715 + $ 146,975
Port Office	212 SW Cascade Ave	$ 240,000 + $ 190,400

Critical facilities, assets, and resources owned by the Port in the **City of North Bonneville** are:

Building/Site/Tenant	Address	Value
Beacon Rock Golf Course / Mark Mayfield	102 Grenia Road	$ 949,500 + $ 578,425 $ 1,527,925
Discovery "I" Building - Green Assets; Discovery "II" Building - Slingshot / Four Peaks Environmental / Jim Stevens	396 Evergreen Drive 390 Evergreen Drive	$ 250,000 + $1,864,490 $ 2,000,000 $ 4,114,490
Evergreen Building/Silver Star Cabinets	505 Evergreen Drive	$ 152,000 + $ 736,598 $ 888,598
Cascades Business Park/For Lease	Highway 14	$ 666,200*
Skye Building/ Total Shield	380 Evergreen Drive	$ 120,000 + $ 223,446 $ 343,446

Critical facilities, assets, and resources owned by the Port in the **Town of Carson** are:

Building/Site/Tenant	Address	Value
Trout Creek Field; WRBU / Vance & Cook	1122 Hemlock Road	$ 225,000

Applicable Regulations and Plans

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Port of Skamania County Master Plan, including Comprehensive Scheme of Harbor Improvements (in accordance with RCW 53.20)
- Port of Skamania County Capital Facilities Plan, 2018-2023
- Skamania County Comprehensive Emergency Management Plan (CEMP)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)

The Commissioners of the Port and their management cadre ensure that planning any repairs, expansions, or improvements to the facilities include a review of pertinent sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	

1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Port's jurisdiction and the Port adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Severe Winter Storm	High	High	High
Earthquakes	High	High	High
Landslides	Medium	Medium	Medium
Flooding	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
The Port considered four hazards as the most impactful on Port (and its customers/tenants) operations. Severe (winter) Storms and Earthquake are considered the highest concerns to due high probability (>50%), continued vulnerability and risk, and severe impact. Landslides and flooding have occurred, but are considered of less than 40% probability and associated average impact due to vulnerability being estimated medium. All three hazards could severely impact the Port's operations and significantly affect the community's transportation routes, some of the housing and structures, and power/communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Educate employees and tenants about natural hazards, the alert system, preparedness, and evacuation routes	YES	N/A

Develop and install backup/alternate data and communication plans	NO	Lack of Funding
Develop and install backup power generation for critical tenant processes	YES	N/A

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS				FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Install emergency backup power generator for continuous internet services for WAVE customers		X	X	X	X		X			X	X			Local, HMGP	Port/Facilities Manager
Establish a plan, system, and protocol to close parks during incidents/events	X	X	X	X	X		X		X	X		X	X	Local	Port/Facilities Manager

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Establish a plan, system, and protocol to prepare surfaces with ice-melt during winter events			X						X	X	X			Local	Facilities Manager
Educate employees and tenants about natural hazards, the alert system, preparedness, and evacuation routes	X	X	X	X	X	X	X	X	X	X	X	X	X	Local	Port Manager & DEM
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Port

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Port
Stabilize any slide-prone locations in areas under the District's/Department's responsibility				X					X	X	X	X	X	Local	Port
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding					X				X	X	X		X	Local	Port

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

9 - Establish a plan, system, and protocol to prepare surfaces with ice-melt during winter events

8 - Educate about natural hazards, the alert system, preparedness, and evacuation routes

8 - Establish a plan, system, and protocol to close parks during incidents/events

7 - Install emergency backup power generator for continuous internet services for WAVE customers

7 - Trim back vegetation to prevent branches breaking powerlines during storms

7 - Review and improve/repair water handling devices/structures ensuring proper drainage

5 - Stabilize any slide-prone locations in areas under the District’s/Department’s responsibility

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

Chapter 22. Public Utility District #1

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
John F. Goodman General Manager jgoodman@skamaniapud.com 509.427.5126	

Jurisdiction Profile

- The Public Utility District No. 1 of Skamania County (Skamania PUD) is a special-purpose district or municipal corporation governed by a board of three publicly elected commissioners. Skamania PUD provides electric service throughout southern Skamania County and water service in the towns of Carson and Underwood, Washington.
- Skamania PUD provides electricity to nearly 5700 customers in southern Skamania County. The PUD is a full-service customer of the Bonneville Power Administration (BPA) meaning Skamania PUD by contract purchases all of its electrical energy from BPA.
- Skamania PUD serves water to more than 950 customers in the Carson area. Surface water from Bear Creek is the primary source of water for the Carson system. About 340 water customers are served in Underwood.

Asset and Resources Profile

The District owned, operated, and maintained assets and resources include:

Facilities and Equipment	Building Value (est.)	Equipment Value (est.)	Total Value (est.)
Public Utility District #1 Office Building, Carson	$ 1,200,000	$ 2,200,000	$ 3,400,000
Power Lines	N/A	$ 27,000,000	$ 27,000,000

Applicable Regulations and Plans

- Washington State's regulations pertaining to Public Utility Districts (e.g., Title 80 RCW, Title 480 WAC, Title 246-290)
- Policies, procedures, and protocols of Public Utility District #1
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

The Commissioners of the Skamania County Public Utility District #1 and their management ensure that planning any repairs, expansions, or improvements to the facilities include a review of relevant sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	

1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Public Utility District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Landslide	High	High	High
Severe Storm	High	Medium	Medium
Wildfire	Medium	Medium	Medium

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
For this public utility district Landslides are the hazard of highest concern (<50% probability) due its infrastructure's high vulnerability and its possible collateral consequence of Severe Storms which occur also frequently (>50%). Wildfires happened less frequently (<50%) and the district feels that their vulnerability and risk should be considered average. All three hazards, however, could severely impact the PUD's operations and electrical power service to the community and also severely affects transportation routes, housing and structures, and communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Continue to update and maintain emergency plans, equipment, and mutual aid agreements for restoration of power and/or water	Yes	N/A
Build a “back-feed” 115kV transmission connection on east end of Skamania County	No	Lack of funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction’s implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Stabilize any slide-prone locations in areas under the District's responsibility				X					X	X	X		X	Local	PUD #1
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	PUD #1
Develop defensive space around critical infrastructure and PUD owned building and venues	X								X	X	X		X	Local	PUD #1
Maintain emergency plans, equipment, mutual-aid-agreement	X	X	X	X	X		X	X	X	X		X		Local	PUD #1
Build a "back-feed" 115kV connection on east end of County	X	X	X	X	X		X	X	X	X				Local	PUD #1

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Emergency generators to water systems and rebuilding substations	X	X	X	X	X				X	X		X		Local	PUD #1
Overhead to underground conversion project	X	X	X	X	X		X		X	X		X		Local	PUD #1

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and PUD owned building and venues

8 - Maintain emergency plans, equipment, mutual-aid- agreement

8 - Build a "back-feed" 115kV connection on east end of County

8 - Overhead to underground conversion project

7 - Trim back vegetation to prevent branches breaking powerlines during storms

6 - Emergency generators to water systems and rebuilding substations

5 - Stabilize any slide-prone locations in areas under the District's responsibility

Chapter 23. Skamania County Cemetery District

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Lisa Nelson Office Manager skacocemetery@embarqmail.com 509.427.4114	

Jurisdiction Profile

- The Skamania County Cemetery District covers all of Skamania County and serves its residents thru ten individual facilities distributed throughout the County landscape.
- All cemeteries are open to the public and cemetery staff is responsible for all aspects of maintenance and internment services.
- The District works closely with funeral directors in the area/region.

Asset and Resources Profile

The Cemetery District's owned, operated, and maintained assets and resources include:

Facility, Resources, or Equipment	Location
Berge Cemetery	Home Valley
Chris Zaba Underwood Cemetery	Underwood
Eyman Cemetery	Carson
Iman Cemetery	Stevenson
Old Carson Cemetery	Carson
Saint Martin Cemetery	Carson
Stevenson Cemetery	Stevenson
Cascade Cemetery	North Bonneville
Belle Center Cemetery	Washougal
Wind River Memorial Cemetery	Carson

Applicable Regulations and Plans

The District follows existing codes, ordinances, policies, or plans which are applicable to this hazard mitigation plan:

- Washington State's General Cemetery Statutes (e.g., Title 68 RCW and Title 98 WAC)
- Skamania County Cemetery Rules & Regulations (updated 2018)
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

The Commissioners of the Skamania County ensure that the Cemetery District management when planning any repairs, expansions, or improvements to the cemetery facilities include a review of relevant sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	

1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Cemetery District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

The Risk rankings were identified for each cemetery's location.

	Berge Cemetery	Chris Zaba Cemetery	Eyman Cemetery	Iman Cemetery	Old Carson Cemetery	Saint Martin Cemetery	Stevenson Cemetery	Cascade Cemetery	Belle Center Cemetery	Wind River Memorial Cemetery
Earthquake	Med	Med	High	Med	Med	Med	Med	Med	Med	High
Wildfire	High	High	Low	Low	High	High	Low	Low	High	Med
Flood	Low	Low	Low	Low	Low	Low	Low	High	Low	Low
Landslide	Low	Low	Low	High	Low	Low	High	Low	Low	Low

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
This district manages ten (10) cemetery locations all of which have slightly different exposures to the four hazards the district identified as being of the most concern. In general, however, Wildfire and Earthquake top the list of hazards due to high occurrence and vulnerability. Floods and Landslides rank behind when averaging frequency, vulnerability, and impact for all ten cemeteries. All three hazards would impact the district's operation and service to the community, affect the transportation routes to and from the ten locations, and could damage some of the structures, and power/communications connections.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Review of topography and structures at all locations	YES	N/A
Development of plans for fuel reduction	YES	N/A
Development of plans to mitigate standing water conditions	NO	Lack of funding
Development of plans for landslide mitigation	NO	Lack of funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Develop defensive space around critical infrastructure and district owned building and venues	X								X	X	X		X	Local	Cemetery Dist
Stabilize any slide-prone locations in areas under the District's responsibility				X					X	X	X	X	X	Local	Cemetery Dist
Implement earthquake improvements in all facilities (e.g., securing equipment and furniture) and preventing upright tombstones toppling over during tremors		X							X	X	X		X	Local	Cemetery Dist
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding					X				X	X	X		X	Local	Cemetery Dist

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Standing water mitigation – develop mitigation plan and implement		X	X	X	X					X		X		Local, HMGP	Cemetery Dist
Landslide mitigation - develop mitigation plans and implement		X	X	X	X		X		X	X		X		Local, HMGP	Cemetery Dist

“Prioritization” & “Benefit vs. Cost” of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The “Benefit vs. Cost” listing here below represents this consideration.

The “Benefit versus Cost” ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of “Ten” being considered the highest benefit compared to cost of implementation. A score of “One” considered the lowest benefit in relation to the cost:

8 - Develop defensive space around critical infrastructure and district owned building and venues

8 - Standing water mitigation – develop mitigation plan and implement

7 - Landslide mitigation - develop mitigation plans and implement

7 - Review and improve/repair water handling devices/structures ensuring proper drainage

5 - Stabilize any slide-prone locations in areas under the District’s responsibility

4 - Implement earthquake improvements at all facilities

Chapter 24. Skamania County Public Hospital District #1

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Ann Lueders Superintendent annlueders@skamaniaems.com 509.427.5065	Dale Grams Commissioner No. 1 commissionergrams@skamaniaems.com 509.427.5065

Jurisdiction Profile

- The Skamania County Public Hospital District #1 – aka Skamania EMS and Rescue, because it is the only health district in Washington State that does not operate a hospital - provide specialty response to medical emergencies, vehicle, rope and trail rescues. The agency also provides community education and outreach.
- The District is headed by three elected commissioners and a superintendent, who manages part-time, full-time, and volunteer EMTs and paramedics who respond to over 1,300 calls per year.
- Skamania EMS and Rescue runs two ALS staffed medic units 24 hours as often as staffing allows, 7 days per week, with two ambulances in reserve for a total of 4 transporting ambulances for Skamania County. They also employ a Rescue vehicle for auto extrication, rope rescue, trail rescue, 2 squads, a regional mass casualty trailer, a rehab trailer, and 2 Polaris 6×6 ATV's.

Asset and Resources Profile

The Cemetery District's owned, operated, and maintained assets and resources include:

Facilities and Equipment	Location	Total Value (est.)
Skamania Co. EMS Ambulance Hall (building and land)	Stevenson	$ 600,000
Four (4) Ambulances	Stevenson	$ 500,000
One (1) Rescue Vehicle	Stevenson	$ 110,000
Two (2) Squads	Stevenson	$ 20,000
One (1) MCI Trailer	Stevenson	$ 15,000
One (1) Rehab Trailer	Stevenson	$5,000
Two (2) Polaris 6x6 ATVs	Stevenson	$ 30,000

Applicable Regulations and Plans

The District follows existing codes, ordinances, policies, or plans which are applicable to this hazard mitigation plan:

- Washington State's regulations pertaining to Public Health Districts (e.g., Chapter70.44 RCW)
- Assn. of Washington Public Hospital Districts – Legal Manual 2020
- Skamania County Hazard Identification and Vulnerability Analysis (HIVA)
- Skamania County Comprehensive Emergency Management Plan (CEMP)

The Commissioners of the Skamania County Public Hospital District #1 and their management ensure that planning any repairs, expansions, or improvements to the facilities include a review of relevant sections of the County's Hazard Mitigation Plan. This practice will continue in the future, considering the new updated Hazard Mitigation Plan.

Hazard Assessment

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
2017	Severe Winter Storm, Flooding, Slides	DR-4309	
2015	Severe Winter Storm, Flooding, Slides	DR-4253	
2015	Severe Winter Storm, Flooding, Slides	DR-4249	
2012	Severe Winter Storm, Flooding, Slides	DR-4056	
2011	Severe Winter Storm, Flooding, Slides	DR-1963	
2009	Severe Winter Storm, Flooding, Slides	DR-1817	
2008	Flooding	DR-1825	
2006	Severe Winter Storm, Flooding, Slides	DR-1682	
2006	Severe Winter Storm, Flooding, Slides	DR-1671	
2001	Earthquake	DR-1361	
1996	Severe Winter Storm, Flooding, Slides	DR-1100	
1996	Severe Winter Storm, Flooding, Slides	DR-1159	
1980	Mt. St. Helens Eruption	DR-623	
1977	Severe Winter Storm, Flooding, Slides	DR-545	

1972	Severe Winter Storm, Flooding, Slides	DR-322	
1964	Severe Winter Storm, Flooding, Slides	DR-185	

There are no repetitive loss or severe repetitive loss properties in the Hospital District's jurisdiction and the District adheres/complies with the flood plain management protocols and processes of the County.

Hazard Risk Ranking

Hazard	Probability	Vulnerability	Risk Rating
Flooding	High	High	High
Severe Storm	High	High	High
Earthquake	Medium	High	High

High Risk = 75% - 100%; Medium Risk = 25% - 75%; Low Risk = less than 25%.

The prioritized hazards above are based on this jurisdiction's experience of the past decade and are expected to keep occurring, exploiting the vulnerabilities that still exist, and thus impacting the community.
The district considers Flooding the highest-ranking hazard with a high probability of occurring (>50%) and highest impact on its operations. The same ranking is allocated for Severe Storms with equal vulnerability and risk, and thus impact on the community. Of a slightly lesser concern is an Earthquake, because of its probability of occurrence is considered way less than 50%. However, all three hazards would impact the district's operation and service to the community, affect transportation routes, and could damage communications infrastructure.

Status of Previous Hazard Mitigation Initiatives

Initiatives that were recommended in the previous version (2010) of the hazard mitigation plan and their implementation status at the time this update was prepared.

INITIATIVES		
Actions, Projects, etc. - Description	**Accomplished?**	**If not - reason?**
Multi-Agency facility to accommodate EMS, Fire, SAR, Sheriff's Office and DEM	No	Lack of funding

2021 Hazard Mitigation Initiatives / Action Plan

Since the last Hazard Mitigation Plan update (2010), the jurisdiction has not seen an increased or decreased vulnerability (to identified natural hazards of concern) due to major changes such as significant construction projects, other development, economic situation, or population changes.

This jurisdiction's implementation of its Hazard Mitigation Plan is focused on the five Goals (Protect Life, Protect Property, Promote a Sustainable Economy, Protect the Environment, and Increase Public Awareness for Disasters) and associated Objectives as listed in Chapter 4 of the main County Plan.

Note: Priorities of the 2021 Hazard Mitigation Activities when compared to those in the old Plan of 2010 have NOT changed.

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Multi-Agency facility to house EMS, Fire, SAR, Sheriff's Office and DEM	X	X	X	X	X	X	X	X	X	X		X		Local, HMGP	Hospital Dist. #1
Review and improve/repair water handling devices/structures ensuring proper drainage during high-volume precipitation to prevent flooding					X				X	X	X		X	Local	Hospital Dist. #1

INITIATIVES	Addressed HAZARDS								Addressed GOALS					FUNDING	Assigned TASKING
Actions, Projects, etc. - Description	Wildfire	Earthquake	Severe Storm	Landslide	Flood	Drought	Volcano	Avalanche	Protect Life	Protect Property	Sustainable Economy	Protect Environment	Public Preparedness	Possible Funding Sources	Lead Agency
Trim back vegetation to prevent branches breaking powerlines during storms			X						X	X	X		X	Local	Hospital Dist. #1
Implement earthquake improvements in all facilities, e.g., securing equipment and furniture, preventing toppling over during tremors		X							X	X	X		X	Local	Hospital Dist. #1

"Prioritization" & "Benefit vs. Cost" of initiatives:

The listed initiatives in the table above are already prioritized by need. However, this prioritization does not consider the cost of their implementation. The "Benefit vs. Cost" listing here below represents this consideration.

The "Benefit versus Cost" ranking of initiatives is on a scale of 10 through 1 and was averaging of subjective opinions. A score of "Ten" being considered the highest benefit compared to cost of implementation. A score of "One" considered the lowest benefit in relation to the cost:

7 - Trim back vegetation to prevent branches breaking powerlines during storms

7 - Review and improve/repair water handling devices/structures ensuring proper drainage

4 - Implement earthquake improvements in all facilities, e.g., securing equipment and furniture

3 - Multi-Agency facility to house EMS, Fire, SAR, Sheriff's Office and DEM

Appendices

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Appendix A

Hazard Mitigation Plan - Planning Team (HMP-PT)

Membership

- Sheriff Dave Brown, Skamania County Sheriff's Office
- Sergeant Jason Fritz, Skamania County Sheriff's Office
- John Carlson, Skamania County Emergency Management
- Tom Lannen, Skamania County Commissioner
- Chief Chris Fuller, Skamania County Fire District #4
- Ann Harriman, Skamania County EOC Staff

Staff: Ernie Schnabler, Incident Management Partners

Appendix B

Meeting Calendar

Date	Type of Meeting/Briefing/Conference	Participants	Objectives/Results
09-25-2019	1st HMP Planning Team (HMP-PT) Meeting	HMP-PT Ernie	Set expectations for update process, timelines, benchmarks, participants, etc.
09-23-2019	HIVA Update briefing with Local Emergency Planning Committee (LEPC)	DEM, LEPC Group, Ernie	Present/discuss HIVA update and get feedback
10-23-2019	PUD public meeting	PUD, DEM, Ernie	Share HIVA, feedback, update
12-05-2019	Review progress of plan development, info needs, etc.	HMP-PT, LEPC Group, Ernie	Review of 1st draft Chapter 1 "Intro" – feedback, update
01-06-2020	Quarterly Report to State	DEM, Ernie	Required report submitted after review
03-03-2020	FD#4 Public Meeting	DEM, FD#4, Ernie	Present HIVA, outline project, solicit feedback, adjust, update
04-01-2020	Quarterly Report to State	DEM, Ernie	Required report submitted after review
04-17-2020	Review progress of plan development, info needs, etc.	HMP-PT, LEPC Group, Ernie	Review of 1st draft Chapter 2 "Community Profile" – feedback, update
06-01-2020	1st contact with the 20 annexing jurisdiction	DEM, Ernie	Outlining the project, reviewing old initiatives, hazards, risks, etc. - update
07-01-2020	Kickoff Meeting with Kevin Zerbe and HMP-PT	HMP-PT Ernie	Q&A to ensure the process follows the State/FEMA guidelines and expectations
07-06-2020	Quarterly Report to State	DEM, Ernie	Required report submitted after review
07-08-2020	Past events by hazard occurrence, vulnerability assessment, impact and risk	LEPC Group, DEM, Ernie	Consolidate and review Federal declarations assess and other local events, compare
08-18-2020	Survey Monkey setup	DEM, Ernie	Select questionnaire complete setup and publicize links to the survey
08-20-2020	Review progress of plan development, info needs, etc.	HMP-PT, LEPC Group, Ernie	Review Ch. #1 and 2 with new feedback, crosscheck, verify, and update
09-01-2020	Chapter #3 draft review meeting	HMP-PT, LEPC Group, Ernie	Review first draft of the Ch. #3 “Natural Hazards Section” – feedback/adjustments
09-08-2020	Interview with the Skamania Pioneer	DEM, Ernie, the public in Skamania County	Interview to engage the public in the HMP update thru this print media and it’s online webinar presence, link to survey monkey and DEM for viewing draft documents

10-03-2020	Quarterly Report to State	DEM, Ernie	Required report submitted after review
10-07-2020	Survey Monkey results analysis	LEPC Group, DEM, Ernie	Review survey results compare to information on hazards, vulnerability, etc. received thus far, and adjust as needed
11-17-2020	Review Mitigation Goals of 2010	LEPC Group, DEM, Ernie	Discussed needed adjustments/revisions of past mitigation goals and objectives; agreed on goals and objectives for the updated Plan.
12-21-2020	Goals & objectives confirmation and review of 2010 mitigation projects	LEPC Group, DEM, Ernie	Review of agreed 2021 goals & objectives and evaluating 2010 projects as to status of completion
01-06-2021	Quarterly Report to State	DEM, Ernie	Required report submitted after review
02-01-2021	Chapter #4 draft review meeting	HMP-PT, LEPC Group, Ernie	Agreed/finalized mitigation goals, objectives, and discussed list of mitigation projects for 2021 Plan
04-12-2021	Quarterly Report to State	DEM, Ernie	Required report submitted after review
05-05-2021	Review progress of plan development, info needs, etc.	HMP-PT, LEPC Group, Ernie	Reviewed 1st complete draft of County Plan w/ draft of the twenty annexes; still info missing from a number of annexing jurisdictions
05-18-2021	Meeting - Update Annexes Process	DEM, Ernie	Rallying to fill info gaps from annexing jurisdictions
06-01-2021	Final efforts to complete annexes	DEM, Ernie, LEPC Group	Rallying to fill info gaps from annexing jurisdictions
06-25-2021	Final feedback from annexing jurisdictions	HMP-PT, LEPC Group, Ernie	Presenting and consolidating the finalized 20 annexes
07-07-2021	Quarterly Report to State	DEM, Ernie	Required report submitted after review
08-05-2021	Review progress of plan development, info needs, etc.	DEM, Ernie	Adding final touches to the County section and some annexes

The Skamania County's Local Emergency Planning Committee (LEPC) has emergency responders, stakeholders, and other interested and concerned member of the community among its members, including private citizens, media, and business. During this update of the Hazard Mitigation Plan these LEPC members were engaged in the process to a certain extent:

Kevin Widerner, Lead, ARES / DEM volunteer
Rick Branum, ARES / DEM volunteer
Rob Farris, Chief, Stevenson FD
Ben Shumaker, Planner, City of Stevenson
Kathleen Carlson, ARES / DEM volunteer
Mary Ann Duncan-Cole, ARES / DEM volunteer
John Goodman, Gen. Mgr., PUD #1
Ole Helgerson, ARES / DEM volunteer
Dave Kuhn, Facilities Supt., Port of Skamania
Joe Hughes, ARES / DEM volunteer
Thomas Payne, ARES / DEM volunteer
John Prescott, ARES / DEM volunteer
Bill Shelton, ARES / DEM volunteer
Norman Teinowitz, ARES / DEM volunteer
Don Tucker, ARES / DEM volunteer
Sonia Waller, ARES / DEM volunteer

Appendix C

Plan Adoption/Promulgation Information

Promulgation of the County Plan

The Skamania County 2021 Multi-Jurisdictional Natural Hazards Mitigation Plan is hereby adopted this … day of ……, 202…, as the official natural hazards mitigation plan for Unincorporated Skamania County and the following annexed jurisdictions:

- City of North Bonneville
- City of Stevenson
- Skamania Fire District #1
- Skamania Fire District #2 & Stevenson Fire Department
- Skamania Fire District #3
- Skamania Fire District #4
- Skamania Fire District #5
- Skamania Fire District #6
- Mill A Fire
- North Bonneville Fire
- Mill A School No. 31
- Mount Pleasant School No. 29
- Skamania School No. 2
- Stevenson-Carson School District #303
- Home Valley Water District
- North Bonneville & Stevenson Community Libraries
- Port of Skamania County
- Public Utility District #1
- Skamania County Cemetery District
- Skamania County Hospital District

The participation in and adoption of a multi-jurisdictional pre-disaster mitigation plan shall not necessarily imply advocacy of, or support for, individual mitigation initiatives proposed by other participating jurisdictions, and the adoption of the plan by each jurisdiction shall be subject to limitations as set forth in each jurisdictions adoption resolution.

APPROVED:

Board of County Commissioners

……..	……..	……..
Commissioner #1	Commissioner #2	Commissioner #3

Sample

ADOPTION BY ANNEXED JURISDICTIONS

(Name of Jurisdiction) Jurisdiction

(Governing Body) Jurisdiction's Council

(Address)

RESOLUTION

WHEREAS, Jurisdiction, with the assistance from Emergency Management, has participated in the preparation of the County's 2021 Hazard Mitigation Plan; and

WHEREAS, the 2021 Hazard Mitigation Plan has been prepared in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Jurisdiction is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, Jurisdiction have reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW THEREFORE, BE IT RESOLVED by the Jurisdiction's Council that Jurisdiction adopts the 2021 Hazard Mitigation Plan as this jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions in the Plan.

ADOPTED this …. th day of ……., 202…. at the meeting of the Jurisdiction's Council.

Appendix D

Record of Changes to the Plan

Change #	Page #	Subject	Date	Entered by

Appendix E

List of Plan Recipients

Copy Number	Agency	Received by	Date received