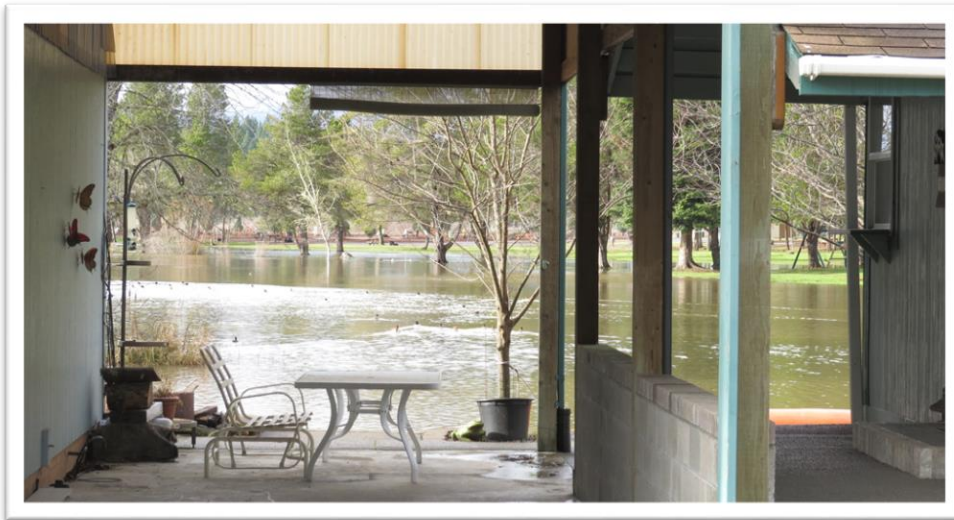




Clark Regional Emergency Services Agency

Clark Regional Natural Hazard Mitigation Plan Volume 2—Planning Partner Annexes

Approved: March 31, 2023



March 31, 2023

Clark Regional Natural Hazard Mitigation Plan: Volume 2—Planning Partner Annexes

March 31, 2023 – Final Adopted Plan

PREPARED BY

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INTRODUCTION

BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

“Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.” (Section 201.6.a(4))

For the *Clark Regional Natural Hazard Mitigation Plan*, a Planning Partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act (DMA) for as many eligible local governments in Clark County as possible. The DMA defines a local government as follows:

“Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

There are two types of planning partners that participated in this process, with distinct needs and capabilities:

- Incorporated municipalities (seven cities, one town and the County)
- Special purpose districts.

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

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County, incorporated cities and towns and all County-recognized special purpose districts at the outset of this project. A kickoff meeting was held on Sept 28, 2022 to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments within the planning area were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Introduce the Planning Team for the project.
- Outline the Clark County plan update work plan.
- Describe the benefits of multi-jurisdictional planning.

- Outline planning partner expectations.
- Solicit planning partners.

All interested local governments were provided with a list of planning partner expectations developed by the planning team and were informed of the obligations required for participation. Local governments wishing to join the planning effort were asked to provide the planning team with a “notice of intent to participate” that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, formal commitment was received from 19 planning partners by the planning team, and the Clark Regional Planning Partnership was formed.

Planning Partner Expectations

Groups Involved in The Planning Process

One of the goals of the multi-jurisdictional approach to natural hazard mitigation planning is to efficiently achieve compliance with the Disaster Mitigation Act (DMA) for all participating members in the planning effort. Several groups were involved in this process at different levels:

- **Project Manager**—The Clark Regional Emergency Services Agency (CRESA) staff responsible for the facilitation of the planning process and the development of the plan document.
- **Planning Partners**—Jurisdictions or special purpose districts that are developing an annex to the regional plan.
- **Planning Stakeholders**—The individuals, groups, businesses, academia, etc., from which the planning team gains information to support the various elements of the plan. This group may also be referred to as coordinating stakeholders.

Definition of Participation

DMA requires that planners identify at the start what the participation requirements are for involved jurisdictions and special districts. Any agency may submit an annex to the plan, so long as they meet these participation requirements. To achieve compliance for *all* planning partners, the plan must clearly document how each planning partner that is seeking linkage to the plan participated in the plan’s development. For this planning process, planning partners met the following participation requirements:

- **Complete administrative tasks.** Participation in this plan included the following administrative tasks:
 - **Complete a letter of intent.** Provide a “Letter of Intent to participate” or a Resolution to participate to the planning team (see exhibit A).
 - **Designate points of contact.** Designate a primary and secondary point of contact. These designees will be listed as the hazard mitigation points of contact for your jurisdiction in the plan.
 - **Approve the steering committee.** The steering committee was approved via an email vote.
- **Participate, as able, in additional opportunities.** Attendance or participation in the following opportunities was also recorded. These records were used to document participation for each planning partner. No thresholds were established as minimum levels of participation for these events. However, each planning partner was expected to attempt to attend all possible meetings and events:
 - Attend steering committee meetings.
 - Attend or host public meetings or open houses.
 - Participate in and advertise the public review and comment period prior to adoption.
- **Support the public involvement strategy.** The planning team requested support from the partnership during the implementation of the public involvement strategy developed by the steering committee.

Support was in the form of providing venues for public meetings, attending these meetings as meeting participants, providing technical support, providing access to mailing lists, providing existing public information materials, etc.

- **Complete the jurisdictional annex template.** Each planning partner completed a jurisdictional annex template. Templates and instructions to aid in their completion were provided to all committed planning partners in a phased approach to extend the level of effort over a series of months. Key components of the annex completion effort were as follows:
 - **Perform a capability assessment.** All planning partners conducted a capability assessment. This required a review of existing documents (plans, studies and ordinances) as well as technical and financial capabilities pertinent to each jurisdiction that can support hazard mitigation.
 - **Review the risk assessment.** Each partner was asked to review the risk assessment and identify hazards and vulnerabilities specific to its jurisdiction. The planning team provided jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability was up to each partner (through a facilitated process during the mandatory workshop).
 - **Review county-wide mitigation recommendations.** Each partner was asked to review and determine if the mitigation recommendations chosen in the base plan meet the needs of its jurisdiction.
 - **Develop a mitigation action plan.** All planning partners developed an action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur. Projects within each jurisdiction consistent with the base plan recommendations were identified and prioritized, and reviewed to determine their benefits vs. costs.
- **Adopt the plan.** The natural hazard mitigation plan must be formally adopted by each jurisdiction. Once this plan is completed, and FEMA approval has been received for each partner, maintaining that eligibility will be dependent upon each partner implementing the plan implementation-maintenance protocol identified in the plan.

Estimated Time Commitment

The time commitment to meet the participation requirements for a planning partner was 36 to 46 hours over a 12-month period. Most of this time was devoted to completing the jurisdictional annex template.

Linkage Procedures

Eligible local jurisdictions that did not participate in development of this plan update may comply with DMA requirements by linking to this plan following the procedures outlined in Appendix B.

ANNEX-PREPARATION PROCESS

Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44 CFR would be met, based on the partners' capabilities and mode of operation. Templates available for the planning partners' use were specific as to whether the partner is a municipality or a special purpose district and whether the annex is an update to a previous natural hazard mitigation plan or a first-time hazard plan. Each partner was asked to participate in a technical assistance workshop during which key elements of the template were completed by a designated point of contact for each partner and a member of the planning team. The templates were set up to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The templates and their instructions can be found in Appendix C to this volume of the Natural Hazard Mitigation Plan.

Prioritization

44 CFR requires actions identified in the action plan to be prioritized (Section 201.c.3.iii). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44 CFR. The actions were prioritized according to the following criteria:

Implementation priorities were established using the following considerations:

- **High Priority**—An action that meets multiple objectives, has benefits that exceed cost, has funding secured or is an ongoing action and meets eligibility requirements for a grant program. High priority actions can be completed in the short term (1 to 5 years). The key factors for high priority actions are that they have funding secured and can be completed in the short term.
- **Medium Priority**—An action that meets multiple objectives, that has benefits that exceed costs, and for which funding has not yet been secured, but is eligible for funding. Action can be completed in the short term, once funding is secured. Medium priority actions will become high priority actions once funding is secured. The key factors for medium priority actions are that they are eligible for funding, but do not yet have funding secured, and they can be completed within the short term.
- **Low Priority**—An action that will mitigate the risk of a hazard, that has benefits that do not exceed the costs or are difficult to quantify, for which funding has not been secured, that is not eligible for grant funding, and for which the time line for completion is long term (1 to 10 years). Low priority actions may be eligible for grant funding from other programs that have not yet been identified. Low priority actions are generally “blue-sky” or “wish-list.” actions. Financing is unknown, and they can be completed over a long term.

Grant pursuit priorities were established using the following considerations:

- **High Priority**—An action that has been identified as meeting grant eligibility requirements, assessed to have high benefits, is listed as high or medium priority, and where local funding options are unavailable or where dedicated funds could be utilized for actions that are not eligible for grant funding.
- **Medium Priority**—An action that has been identified as meeting grant eligibility requirements, assessed to have medium or low benefits, is listed as medium or low priority, and where local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting grant eligibility requirements, or has low benefits.

Benefit/Cost Review

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

Benefit ratings were defined as follows:

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

Cost ratings were defined as follows:

- **High**—Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
- **Medium**—Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- **Low**—Possible to fund under existing budget. Action is or can be part of an existing ongoing program.

Using this approach, actions with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial. For many of the strategies identified in this action plan, the partners may seek financial assistance under the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation (PDM) Program, both of which require detailed benefit/cost analyses. These analyses will be performed on actions at the time of application using the FEMA benefit-cost model. For actions not seeking financial assistance from grant programs that require detailed analysis, the partners reserve the right to define “benefits” according to parameters that meet the goals and objectives of this plan.

Analysis of Mitigation Initiatives

Each planning partner reviewed its recommended initiatives to classify each initiative based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

Hazard Maps

Maps for each participating city or town are provided in the individual annex for that city this volume. Maps showing the location of participating special purpose districts by district type are included in Appendix D. These maps will be updated periodically as changes to the partnership occur, either through linkage or by a partner dropping out due to a failure to participate.

COMPATIBILITY WITH PREVIOUSLY APPROVED PLANS

Of the 17 committed planning partners, sixteen were covered by the 2017 plan approved by FEMA, which was a major update to the 2004 plan which only involved 8 partners. The COVID-19 pandemic affected the ability to undertake the Hazard Mitigation Plan update to the extent that had been originally intended. The Project Manager’s role in the community response, and the higher priority responsibilities the pandemic placed upon the staff of partner organizations, delayed the kickoff of the planning team and limited involvement. Additionally, the

pandemic prevented in-person meetings and required the team to utilize virtual work environments. The chapters of this plan describing the plan update process and the tools and techniques that were utilized address these topics as if they were being completed for the first time. When relevant, the update discusses correlations with the 2017 plan, especially when data or information is being carried over to this update.

FINAL COVERAGE UNDER THE PLAN

Of the 17 committed planning partners, they all fully met the participation requirements specified by the Planning Team. The planning partner who was unable to complete the process indicated that the decision to leave the partnership resulted from severe understaffing. If desired, that planning partner can follow the linkage procedure described in Appendix B of this volume to rejoin the partnership at a later date. Table 1 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

Table 1 - Planning Partner Status

Municipalities	Annex Completed
Clark County	Yes
City of Battle Ground	Yes
City of Camas	Yes
City of La Center	Yes
City of Ridgefield	Yes
City of Vancouver	Yes
City of Washougal	Yes
Town of Yacolt	Yes
Special Purpose Districts	
Battle Ground Public Schools	Yes
Clark County Public Utilities District #1	Yes
Clark Regional Wastewater District	Yes
C-TRAN Public Transit Benefit Ares	Yes
Clark Fire Protection District #3	Yes
Evergreen Public Schools	Yes
Port of Vancouver USA	Yes
Ridgefield School District	Yes
Vancouver Public Schools	Yes

ACRONYMS AND ABBREVIATIONS

The following terms are used in the planning partner annexes:

- BCEGS—Building Code Effectiveness Grading Schedule
- CDBG-DR—Community Development Block Grant Disaster Resilience
- CEMP—Comprehensive Emergency Management Plan
- CERT—Citizens Emergency Response Training
- CFR—Code of Federal Regulations
- CRESA—Clark Regional Emergency Services Agency
- CRS—Community Rating System
- DMA—Disaster Mitigation Act
- EPA—U.S. Environmental Protection Agency
- FEMA—Federal Emergency Management Agency
- FMA—Flood Mitigation Assistance
- GIS—Geographic Information System
- GMA—Growth Management Act

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- Hazus-MH—Hazards, United States-Multi Hazard
 - HMGP—Hazard Mitigation Grant Program
 - IBC—International Building Code
 - IRC—International Residential Code
 - NEHRP—National Earthquake Hazards Reduction Program
 - NFIP—National Flood Insurance Program
 - NHMP—Natural Hazard Mitigation Plan
 - NWS—National Weather Service
 - PDM—Pre-Disaster Mitigation Grant Program
 - RCW—Revised Code of Washington
 - UASI—Urban Area Security Initiative
 - USGS—U.S. Geological Survey
 - WUI—Wildland Urban Interface

1. CLARK COUNTY

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Mike Lewis
Emergency Management/Security Coordinator
1300 Franklin Street 402 / PO Box 9810
Vancouver, WA 98666
Telephone: 360-397-4838
e-mail Address: Mike.lewis@clark.wa.gov

Alternate Point of Contact

Melissa Tracy
Planning Technician II
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Vancouver, WA 98666
Telephone: 360-397-5843
e-mail Address:
Melissa.tracy@clark.wa.gov

1.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—1849
- Current Population— 513,100 (County), 236,200 (unincorporated Clark County) as of April 2021 (2021 Office of Finance estimates).
- Population Growth—Based on data tracked by the Office of Finance, Clark County has experienced an increasing rate of growth over the past 10 years. The overall population has increased 18.33 percent since 2010. Significantly, Clark County experienced a 1.94 percent rate of growth in the last year, ranking it second in rate of growth among counties in Washington State.
- Location and Description—Clark County is located in the southern part of Washington State. Clark County is the state’s seventh smallest county, encompassing an area of 656 square miles. The county is bordered by the Columbia River and State of Oregon to the south and west, the Lewis River drainage system, including Lake Merwin and Yale Lake as well as Cowlitz County to the north and Skamania County to the east. Clark County is the home of Washington State University’s Vancouver campus. The Port of Vancouver, a deep draft port is located in the southwestern corner of the county. Interstates 5 and 205 and State Route 14 are the major highways within the county.
- Brief History—Clark County began as the Vancouver District in 1844. In 1845 the name was changed to Vancouver County. On September 3, 1849 the Oregon Territorial Legislation changed the name to Clark County in honor of explorer William Clark. Originally covering the area north of the Columbia River, east to the Rockies and south of Alaska, the County was divided and subdivided until reaching its present size in 1880. Clark County has a long and storied cultural, economic, industrial, and military history. From Fort Vancouver and Vancouver Barracks to WWI and WWII, the county has a rich history in many areas such as logging, lumber mills, railroad, aviation, and shipbuilding. In 1989, Washington State University Vancouver was established, conducting virtual classrooms until 1996 when the campus located in the Salmon Creek area opened. The County has a mix of rural and urban areas and has become a regional hub for transportation and commerce.

- **Climate**—Clark Counties weather is typical of the central valley in the Pacific Northwest, with the strong influences of the Pacific Ocean and Cascade Mountain Range producing mild summers and cool wet winters. The average annual rainfall is 42 inches, but varies quite a bit, ranging from 38 inches on the west side to 80 inches in Yacolt. Mountainous areas in northeastern Clark County can receive over 120 inches of annual rainfall. Seventy percent of the county’s rainfall occurs between November and March. The average annual snowfall ranges from 7 inches on the western side to several feet in the mountains, although snow does not occur every year. The average year-round temperature is 50°F. The average high in July is 80°F and average low in January is 34°F. Prevailing winds over most of the county are from the northwest in the summer and southeast in the winter.
- **Governing Body Format**—Clark County is governed under the Home Rule Charter, which took effect in January 2015 and as amended by the Charter Review Commission in 2021. It includes a five-member council, one of which is elected chair by the council, and a county manager. Other elected officials include the Assessor, Auditor, Clerk, District Court, Prosecuting Attorney, Sheriff, Superior Court and Treasurer. Under the direction of the County Manager are six external departments: Council and County Managers Office, Community Development, Community Planning, Community Services, Public Health, Public Works and one Internal Services department. The County has over 35 boards, commissions, committees and advisory groups, which report to the Council. The Board of County Councilors assumes responsibility for the adoption of this plan; the County Manager will oversee its implementation.
- **Development Trends**—Anticipated development levels for Clark County are moderate to high, consisting of residential and commercial development. The majority of recent development has included development of areas within the existing urban growth boundaries as urban infrastructure capacity is extended and increased to support development activity. Residential development has consisted primarily of single family homes and some multi-family developments. Clark County is currently in cycle to update its growth management plan effective June 30, 2025. The prior plan update was in 2016. Plan policies for the 2025 update continue to be developed.

1.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 1-1. An assessment of fiscal capabilities is presented in Table 1-2. An assessment of administrative and technical capabilities is presented in Table 1-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-4. Classifications under various community mitigation programs are presented in Table 1-5. An assessment of education and outreach capabilities is presented in Table 1-6.

In addition to the capabilities listed below, it should be noted that Clark County is a member of the Discovery Clean Water Alliance, which was legally formed on January 4, 2013 under the Joint Municipal Utility Services Act (RCW 39.106). The Alliance serves four Member agencies – the City of Battle Ground, Clark County, Clark Regional Wastewater District and the City of Ridgefield. The Alliance Members jointly own and jointly manage regional wastewater assets under Alliance ownership. The Alliance seeks to optimize the long-term framework for delivery of regional wastewater transmission and treatment services to the urban growth areas in the central portion of Clark County, Washington.

Table 1-1. Legal and Regulatory Capability

CODE	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code	Yes	No	Yes
Comment: Clark County Code Title 14- Buildings and Structures & Title 15- Fire Prevention- adopted July 2016			
Zoning Code	Yes	No	Yes

CODE	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: Clark County Code Title 40- Clark County, Washington Unified Development Code Consolidates all development related codes into one document			
Subdivisions	Yes	No	Yes
Comment: Clark County Code Chapter 40.540 – Boundary Line Adjustments and Land Divisions Section 40.540.040 - Subdivisions			
Stormwater Management	Yes	No	Yes
Comment: Clark County Code Chapter 40.386 – Stormwater and Erosion Control Clark County Stormwater Management Plan (March 2022)			
Post-Disaster Recovery	No	No	No
Comment: N/A			
Real Estate Disclosure	No	No	No
Comment: N/A			
Growth Management	Yes	No	Yes
Comment: Clark County Comprehensive Plan –Adopted June 2016 (latest amendment December 2021) Update due June 30, 2025			
Site Plan Review	Yes	No	Yes
Comment: Clark County Code Chapter 40.520 – Permits and Reviews Section 40.520.040 – Site Plan Review All new commercial and residential projects require Building and Fire review of the site plan for County requirements.			
Environmental Protection	Yes	No	Yes
Comment: Critical Areas Ordinances (CAO)- Clark County Code Subtitle 40.4- Critical Areas and Shorelines			
Flood Damage Prevention	Yes	No	Yes
Comment: Critical Areas Ordinances (CAO)- Clark County Code Chapter 40.420 – Flood Hazard Areas- Adopted July 2012			
Emergency Management	Yes	Yes	Yes
Comment: Clark County Code Chapter 2.48A – Emergency Management *Clark Regional Emergency Services Agency Interlocal Cooperation Agreement *Washington State Emergency Management Division			
Climate Change	No	No	No
Comment: N/A			
Other	No	No	No
Comment: N/A			
General or Comprehensive Plan	Yes	No	Yes
Comment: Clark County Comprehensive Plan –Adopted June 2016 (latest amendment December 2021) Update due June 30, 2025			
Capital Improvement Plan	Yes	No	Yes
Clark County Comprehensive Plan –Appendix E- Capital Facilities Plan			
Comment:			
Floodplain or Watershed Plan	Yes	Yes*	No
Comment: Clark County Code Chapter 40.420 – Flood Hazard Areas Clark County Code Chapter 40.410- Critical Aquifer Recharge Areas * Lower Columbia Fish Recovery Board & Washington State DEQ			
Stormwater Plan	Yes	No	Yes
Comment: Clark County Code Chapter 40.386- Stormwater and Erosion Control Clark County Stormwater Management Plan (March 2022)			
Habitat Conservation Plan	Yes	No	No
Comment: Clark County Code Chapter 40.440- Habitat Conservation Clark County Code Chapter 40.450- Wetland Protection			

CODE	Local Authority	Other Jurisdiction Authority	State Mandated
Economic Development Plan Comment: Clark County Code Chapter 40.230- Commercial, Business, Mixed Use and Industrial Districts Clark County Economic Development Plan – September 2011 Clark County Comprehensive Plan – Chapter 9 -Adopted June 2016 (latest amendment December 2021) Update due June 30, 2025 * Columbia River Economic Development Council	Yes	Yes*	Yes – dependent on funding
Shoreline Management Plan Comment: Clark County Code Chapter 40.460 – Shoreline Master Program – last amendment December 2020 Clark County Comprehensive Plan- Chapter 13	Yes	No	Yes
Community Wildfire Protection Plan Comment: Clark County Code Chapter 15.13- Wildland Urban Interface/Intermix Ordinance Clark County Forest Stewardship Plan – Camp Bonneville – October 2017- Appendix 4- Wildfire Suppression Plan	Yes	No	No
Forest Management Plan Comment: Clark County Forest Stewardship Plan – Camp Bonneville – October 2017	Yes	No	No
Climate Action Plan Comment: N/A	No	No	No
Other Comment: Clark Regional Disaster Debris Management Plan – February 2019 .	Yes	Yes	No
Comprehensive Emergency Management Plan Comment: Clark Regional Comprehensive Emergency Management Plan – December 2018	Yes	No	Yes
Threat & Hazard Identification & Risk Assessment Comment: Clark County Hazards Identification Vulnerability Analysis- 2011 *Clark Regional Emergency Services Agency *Regional Disaster Preparedness Organization (RDPO) and Portland Urban Area Security Initiative(UASI)	Yes	Yes*	No
Post-Disaster Recovery Plan Comment: N/A	No	No	No
Continuity of Operations Plan Comment: Clark County Code Section 2.48A.050- Continuity of Government	Yes*	No	No
Public Health Plan Comment: Clark County Code Title 24- Public Health Clark County Public Health Strategic Plan 2018 – 2025 Region IV Public Health Emergency Response Plan – June 2019	Yes	No	No

Table 1-2. 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	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other Legacy Lands Program	Yes

Table 1-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Clark County Dept. of Community Development – Land Use Clark County Dept. of Public Works / Clark County Public Health Dept
Engineers or professionals trained in building or infrastructure construction practices	Yes	Clark County Dept. of Community Development- Building Safety: Inspectors Plans Examiners Administrative Staff Clark County Dept. of Community Development- Fire Marshal’s Office: Deputy Fire Marshal’s Administrative Staff Clark County Public Works Dept. Project Managers Construction Engineering
Planners or engineers with an understanding of natural hazards	Yes	Clark County Public Works Dept.
Staff with training in benefit/cost analysis	Yes	Clark County Budget Office Clark County Auditor’s Office Clark County Risk Management
Surveyors	Yes	Clark County Public Works Dept.
Staff capable of making substantial damage estimates	Yes	<u>Buildings</u> – Clark County Dept. of Community Development <u>Bridges/Infrastructure/Soils</u> – Clark County Public Works Dept. – Also has GEO-Tech Contractors on immediate contract
Personnel skilled or trained in GIS applications	Yes	Clark County GIS Department Includes: GIS Manager – 1 GIS Coordinator/Project Mgr – 3 (2) GIS Coordinator/ GIS DBA – 1 GIS Analysts – 6 (1) HAZUS/EOC trained GIS Technicians – 5 Land Records Technicians - 4
Scientist familiar with natural hazards in local area	Yes	Clark County Public Works Dept.: Cleanwater Access to CVO, NWS and other organizations
Emergency manager	Yes	Clark Regional Emergency Services Agency (CRESA) – Emergency Management Division Manager
Grant writers	Yes	Multiple depending on subject

Table 1-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	08/02/82
When did the Flood Insurance Rate maps become effective?	09/5/2012
What local department is responsible for floodplain management?	Clark County Public Works Dept.

Criteria	Response
Who is your floodplain administrator? (department/position) <ul style="list-style-type: none"> • Is this a primary or auxiliary role? 	Clark County Public Works – Engineering Division Manager (moving to Clean Water Division Manager in 2022) Auxiliary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance? <ul style="list-style-type: none"> • Does your floodplain management program meet or exceed minimum requirements? • If so, in what ways? 	July 15, 2012 Exceed Exceeds due to higher regulatory standards and participation in the Community Rating System. The County has adopted higher regulatory standards than the NFIP requirements. These include <ul style="list-style-type: none"> • New residential, commercial and industrial construction, as well as substantial improvements shall have the lowest floor (including basement) elevated at least one foot above based flood elevation. • No net loss of conveyance or storage capacity for all channels during 100-year flood event. • Adoption of both the IRC and IBC. • All manufactured homes to be placed or substantially improved within a special flood hazard area shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at least one (1) foot above the base elevation.
When was the most recent Community Assistance Visit or Community Assistance Contact?	September 24, 2008
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> • If so, please state what they are. 	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> • If no, please state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> • If so, what type of assistance/training is needed? 	Yes E072 – Hazus – MH for Flood E0194- Advanced Floodplain Management Concepts E0272- Managing the Floodplain Post-Disaster

Criteria	Response
	E0273- Managing Floodplain through NFIP E0278- NFIP / Community Rating System E0282- Advanced Floodplain Concepts II CFM Certification training program if available.
Does your jurisdiction participate in the Community Rating System (CRS)?	Yes
• If so, is your jurisdiction seeking to improve its CRS Classification?	Yes the County would like to improve its CRS rating to 4
• If not, is your jurisdiction interested in joining the CRS program?	Already participate in CRS
• How many Flood Insurance policies are in force in your jurisdiction? ^a	432
• What is the insurance in force? ^a	\$127,113,000
• What is the premium in force? ^a	\$336, 931
• How many total loss claims have been filed in your jurisdiction? ^a	113
• How many claims were closed without payment/are still open? ^a	0
• What were the total payments for losses? ^a	\$1,924,727.00

a. According to FEMA records as of 11/30/15.

Table 1-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	Yes	5	October 2015
Building Code Effectiveness Grading Schedule	Yes	3	November 2015
Public Protection	Yes	Varies by Fire District	Varies – Information available at each Fire District
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 1-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes – The Communications Office reports directly to the County Manager. Public Works and Public Health have PIOs as well.
Do you have personnel skilled or trained in website development?	Yes – PIO has a Graphic Designer Information Technology Dept. – Web design team
Do you have hazard mitigation information available on your website?	Minimal and on individual department sites. Plan to have a one stop website with links in the future. Hazard Mitigation Plan on its own site.
• If yes, please briefly describe.	
Do you utilize social media for hazard mitigation education and outreach?	Yes
• If yes, please briefly describe.	Currently- Facebook, Twitter, Floodplain Newsletter Future- Possibly Youtube
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
• If yes, please briefly specify.	<u>Development & Engineering Advisory Board</u> Works with Public Works and community development to review policy and code changes

Criteria	Response
	<p>Planning Commission Advises the BOCC on matters related to physical development in unincorporated areas.</p> <p>Stakeholder Advisory Committee High level guidance for update of codes and design governing stormwater management.</p> <p>Technical Committee Advise on technical aspect of stormwater design and codes.</p> <p>Board of Health Exercises final authority over all matters pertaining to preservation of life and health of the people of Clark County</p>
<p>Do you have any other programs already in place that could be used to communicate hazard-related information?</p> <ul style="list-style-type: none"> If yes, please briefly describe. 	<p>Yes</p> <p>Internally- Employee FYI weekly newsletter, monthly safety committee meetings</p> <p>External- News releases, Clark-Vancouver Television (CVTV), Clark County Neighborhood Associations, various County mailings (ie. The Public Works annual newsletter to the special flood hazard area Clark County Fire Marshal Spring Wildfire Campaign</p>
<p>Do you have any established warning systems for hazard events?</p> <ul style="list-style-type: none"> If yes, please briefly describe. 	<p>Yes</p> <p><u>Internal</u> to County Government: Emergency Notification System (ENS) –desktop application.</p> <p><u>External</u>: Clark Regional Emergency Services Agency (CRESA) – Public Alerts system (Everbridge - wireless, VOIP, emails)</p>

1.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

1.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- Currently – Risk assessments from the 2017 Hazard Mitigation Plan were used to inform the 2019 Regional Disaster Debris Management Plan as well as planning efforts in Public Works.
- A direct linkage enabling future integration, was included in the 2016 update to the County Comprehensive Plan adopted June 30, 2016.

- Title 40- Clark County Washington, Unified Development Code addresses many aspects of integration in its various sections, including Shoreline Master Program, Land Use, Development, Permitting and specific Hazard Areas. However, Title 40 needs a thorough review specifically looking at integration with this plan. That action is captured in 1.4.2

1.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- County Department Engagement –
Engage all County Departments and make them aware of the contents of the Hazard Mitigation Plan and the associated risk assessment. Upon plan approval, the point of contact for the plan will meet with the directors of each county department and seek their support in using the risk assessment and identifying opportunities for integration in plans, projects and programs for which they are responsible.
- Clark County Comprehensive Plan-
Look for opportunities to integrate goals and use the risk assessment info to in multiple chapters of the Comp Plan including the Land use, Environmental, Parks, Recreation and Open Space. Consider developing a new Mitigation Chapter in the Comp Plan. As integration opportunities are identified they will be accomplished during the Comp Plan annual update process.

Public Works Emergency Response Plans/SOP/Ops Manual-

Continue to integrate goals where applicable and use the risk assessment information to inform the planning efforts in Public Works. Seek opportunities to implement mitigation actions in Public Works projects as feasible.

- Regional Disaster Debris Management Plan-
Continue to integrate goals where applicable. Use the risk assessment information and debris estimates from the Mitigation Plan in future updates.
- Clark County Stormwater Management Plan-
Integrate goals where applicable. Use the risk assessment information to inform planning processes. Engage with Stormwater staff and look for opportunities to include mitigation considerations and action during Stormwater construction projects. The Public Works – Clean Water Division Manager will be taking over as the floodplain administrator in 2022, which should assist in identifying opportunities for integration.
- Applicable sections of Clark County Code. Some examples are Titles 12, 13,14, 15 and 40-
Work with responsible department directors and managers to integrate the goals from the Mitigation Plan into applicable sections of the Clark County Code. Assist them in working with leadership to gain approval and updates to the code. Use the risk assessment information to inform the planning and updates. Title 12 – Streets and Roads, Title 13- Public Works, Title 14- Buildings and Structures, Title 15- Fire Prevention, Title 40 Clark County Unified Development Code.
- Clark Regional Comprehensive Emergency Management Plan and annexes (CEMP)-
As one of the planning partners, support the integration of goals into the planning updates to the CEMP and its annexes. Where possible support mitigation actions that relate to this plan including those of other partners. Use the risk assessment information to inform planning, exercises and plan updates.

1.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-7 lists notable past occurrences of natural hazards within the jurisdiction.

Table 1-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment ^a
Severe storm, high wind	N/A	9/8/2020	N/A
Severe storm, high wind	N/A	1/6/2019	\$252,860
Tornado	N/A	10/12/2017	N/A
Tornado	N/A	3/24/2017	N/A
Severe winter storm, heavy snow, wind, ice	N/A	1/10/2017	\$31,526
Severe storm, flooding, tornado	4253	12/1/2015	\$712,833
Severe storm, tornado	N/A	3/21/2013	\$10,162
Severe storm, high wind	N/A	12/16/2012	\$103,110
Flood	N/A	6/1/2011	\$1,262,934
Flood	N/A	5/26/2011	\$315,733
Severe winter storm-Snow	1825	12/12/2008	\$611,898
Tornado	N/A	1/10/2008	\$577,262
Severe winter storm, landslides, mudslides	1682	12/14/2006	N/A
Severe storms, flooding, landslides and mudslides	1671	11/02/2006	N/A
Severe storm, high wind	N/A	2/10/2006	\$234,857
Earthquake	1361	2/28/2001	N/A
Tornado	N/A	5/11/2000	\$13,747
Severe winter storm – ice storm	N/A	1/14/1998	\$181,546
Tornado	N/A	5/31/1997	\$14,749
Severe winter storms, land & mudslides, flooding	1159	12/26/1996	\$377,208
Severe storm- high wind & flooding	1100	1/26/1996	N/A
Severe storms- high wind & flooding	1079	11/29/1995	\$862,992
Flood	N/A	11/23/1990	\$7,875,187
Tornado	N/A	6/29/1989	\$954
Severe winter storm- high wind & snow	N/A	2/1/1989	\$244,764
Flood	N/A	11/23/1986	\$900,000
Tornado	N/A	10/13/1984	\$11,392
Severe storm – high wind	N/A	12/24/1983	\$2,971,084
Severe storm- high wind	N/A	11/24/1983	\$108,039
Severe storm- high wind	N/A	11/14/1981	\$333,891
Volcanic eruption- Mt St Helens	623	5/21/1980	N/A
Severe winter storm- snow	N/A	1/8/1980	\$359,126
Severe storm- high wind	N/A	2/12/1979	\$9,590,677
Severe storms- flood & mudslides	545	12/10/1977	N/A
Flood	N/A	12/2/1975	\$169,242,207
Severe storm- high wind	N/A	1/8/1973	\$666,486
Tornado	N/A	4/5/1972	\$28,317,703
Severe storm- flooding & landslides	N/A	2/27/1972	\$235,981
Flood	N/A	1/20/1972	\$353,971
Severe storm- heavy rain & snow- flooding	185	12/29/1964	\$979,057
Flood	146	3/2/1963	N/A
Severe storm- wind & rain	137	10/20/1962	\$103,143
Flood	70	3/6/1957	N/A
Flood	50	2/25/1956	N/A

a. Note the Preliminary Damage Estimates are from SHELUDS and may not be exact/accurate. N/A indicates-unknown.

1.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 8
- Number of FEMA-identified Severe-Repetitive-Loss Properties: Unknown
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 1

Other noted vulnerabilities include:

- No standardized method or system for capturing and retaining perishable data during and after significant events has been established. Some progress has been made, but more work is needed in this area.
- Public Works has knowledge of common localized urban shallow flooding areas and landslides areas throughout the County which affect transportation routes and may help identify areas of isolation. The information needs to be collected, reviewed, verified and mapped in GIS, then shared with our partners.
- Detailed seismic and other natural disaster assessments were not completed on County facilities.
- County Essential Functions have not been identified and prioritized.
- No back-up power is currently available at the vast majority of County Government facilities. At the few that have back-up power, the capacity is inadequate and only powers life safety systems like emergency lighting and fire suppression systems. Public Works has made some progress by installing a generator at the Operations Center and portable generator hook-ups at the rural sheds, but the maintenance facility still lacks backup power.
- Lack of alternate and back-up communications at County Facilities.
- Lack of integration of disaster, response and recovery planning efforts, internally and externally. No common references and resources used in plan development. General lack of awareness of other planning efforts.
- Many critical county and non-county facilities are located in liquefaction areas.
-
- The cascading effects from a very strong earthquake on Cascadia or Portland Hills is not well known.
- The Regional Debris Management Plan needs expanded to include pre-identifying contractors with necessary qualifications for key positions.

1.7 HAZARD RISK RANKING

Table 1-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	51	High
2	Earthquake	48	High
3	Flood	21	High
4	Wildfire	19	Medium
5	Landslide	18	Medium
6	Dam Failure	6	Low
7	Volcano	4	Low
8	Drought	3	Low

1.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 1-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table

were developed in 2016. It should be noted, that since their identification, the county experienced a reorganization and significant staff turnover including management in many of the programs that are instrumental in making progress on the initiatives. In addition, the COVID-19 Pandemic curtailed interaction with the public, greatly affecting outreach due to cancellation of in person events such as the Fair, home and garden shows, and many in person inspections and visits.

Table 1-9 Status of Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits. Comment: Carry Over – Clark County will continue to look for and support these opportunities when appropriate. See Action # CC-1 in updated Action Plan.		X	
Integrate the hazard mitigation plan into other plans, programs, ordinances, codes and databases that dictate land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community. Ensure managers and planners within responsible departments are aware of the hazard mitigation plan, the information contained within it, and its potential for integration. Do so through direct engagement, training and education. Comment: Carry Over – The hazard mitigation plan has been used to inform other plans. The emergency management coordinator will continue to raise awareness among directors and managers in key departments and champion integration where possible. See Action #CC-2 in updated Action Plan.		X	
Develop and implement a program to capture perishable data during and after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support our partners and future mitigation efforts including the update, implementation and maintenance of the hazard mitigation plan. Support the establishment of a county-wide repository for capturing this information. Comment: Carry Over – Some basic mechanisms have been put in place to capture data. Clark County will look to expand these and integrate them into the response. See Action # CC-3 in updated Action Plan.		X	
Support the County-wide initiatives identified in Volume I of the hazard mitigation plan. Comment: Completed / Carry Over (Ongoing) – The county actively supports the County-wide initiatives. See Action # CC-4 in updated Action Plan.	X	X	
Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan. Share lessons learned and mitigation success stories and actively participate in progress reporting. Comment: Completed / Carry Over (Ongoing) – The county is an active partner and continues to participate in plan maintenance protocols, sharing of information and reporting. See Action # CC-5 in updated Action Plan.	X	X	
Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP. Comment: Completed / Carry Over (Ongoing) – The county has maintained its standing in the NFIP. See Action # CC-6 in updated Action Plan.	X	X	
Work with building officials to identify ways to improve our jurisdiction's BCEGS classification. Comment: Carry Over – The county will continue looking for ways to improve our BCEGS classification. See Action #CC-7 in updated Action Plan.		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
In cooperation with our participating jurisdictional partners, finalize the Regional Disaster Debris Management Plan by incorporating changes that were recommended during the 2014 review of the draft plan. Identify, assess and document debris collection sites. Ensure the plan meets at least the minimum requirements for future review and approval. Comment: Completed - Carry Over (Modified)- The Regional Debris Management Plan was completed in February 2019 and approved by FEMA. Action Item will be carried over and modified to include plan review, maintenance and expansion as needed. See Action # CC-8 in updated Action Plan.	X	X	
Maintain the County CRS classification and where appropriate take steps to improve our CRS classification. Comment: Completed / Carry Over – The county has maintained CRS classification and will continue to do so while seeking improvement in classification as appropriate. See Action # CC-9 in updated Action Plan.	X	X	
Establish a program to encourage voluntary structural retro-fitting of older homes on vulnerable soils by providing information and resources during scheduled public outreach events and when requested. Comment: Carry Over – See Action #CC-10 in updated Action Plan.		X	
Establish a program to encourage voluntary non-structural and structural retro-fitting throughout the County by providing information and resources during scheduled public outreach events and when requested. Comment: Carry Over – See Action #CC-11 in updated Action Plan.		X	
Establish a program to encourage structural retro-fitting of hazardous materials containment during Clark County Fire Marshal operational permit inspections. Comment: Carry Over – See Action #CC-12 in updated Action Plan.		X	
Establish a program to encourage non-structural retro-fitting of hazardous materials containment during Clark County Fire Marshal annual facilities visits. Comment: Carry Over – See Action #CC-13 in updated Action Plan.		X	
Establish a program to encourage and assist residents in understanding the benefits of defensible space to minimize and reduce the impacts of fires during public outreach opportunities and the Spring Wildfire Campaign. Comment: Carry Over – See Action #CC-14 in updated Action Plan.		X	
Develop a program within the Community Development Department (Building Safety) to review the unincorporated area critical facilities list from the hazard mitigation plan, prioritize the list, and conduct outreach and education to owners concerning pre-disaster assessments. Comment: Carry Over – Community Development Building Safety is reviewing and verifying the list in conjunction with a project to enhance our capability to conduct post disaster rapid assessments on buildings and bridges. See Action #CC-15 in updated Action Plan.		X	
Develop a standard hazards planning map in GIS using the best available information. Include layers for each of the hazards identified in the hazard mitigation plan. In addition, create a map layer of the known shallow flood areas based on information from Public Works, and other layers including liquefaction and critical facilities and transportation infrastructure. Once complete, integrate this mapping into planning. New layers should be added as a need is identified. Share within the County Government and with our planning partners. Comment: Carry Over – See Action #CC-16 in updated Action Plan.		X	
Establish a hazard mitigation webpage on the Clark County internet website with links to pertinent hazard mitigation topics and information from County Departments (I.E. retro-fit information, defensible space, etc.) to support public outreach and education as well as other action items.		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
<p>Include a link to the hazard mitigation plan and information on CRESA's website.</p> <p>Comment: Carry Over (Modified) – Many departments have information and resources available on their individual webpages, including Community Development Building for commercial and residential and the Fire Marshals webpage. See Action #CC-17 in updated Action Plan.</p>			
<p>Expand our participation in the Great Washington SHAKEOUT drill throughout the County Government. Exercise the ENS system during the drill. Conduct de-briefings and collect lessons learned and improve our procedures to enhance earthquake preparedness and employee safety. Encourage the public to participate as well, using social media, website, and other public outreach methods.</p> <p>Comment: Completed / Carry Over (Ongoing) – Clark County government actively participates in the Great Washington SHAKEOUT each year and has implemented all the actions including AARs and process improvements as well as actively encouraging others to participate. See Action #CC-18 in updated Action Plan.</p>	X	X	
<p>Add a hazard mitigation information section to the annual newsletter mailing to the special flood hazard area. Include hazard information and resources as part of our public outreach.</p> <p>Comment: Completed / Carry Over (Ongoing) – Hazard mitigation information added to the annual newsletter. See Action #CC-19 in updated Action Plan.</p>	X	X	
<p>Where feasible, continue to encourage and support efforts to re-open/improve access roads into the County forest for fire suppression and fuel breaks.</p> <p>Comment: Completed / Carry Over (Modified) – County Parks has made significant progress in thinning, clearing and opening the county forest at Camp Bonneville, improving resilience to wildfire and access for suppression. See Action #CC-20 in updated Action Plan.</p>	X	X	
<p>Develop a County Continuity Of Operations Plan (COOP). Initial priority is to identify and prioritize County essential functions and critical facilities based on function during an event.</p> <p>Comment: Carry Over (Modified) – Minor progress has been made on COOP development at the department level. Primary focus will shift to facilities. See Action #CC-21 in updated Action Plan.</p>		X	
<p>Conduct pre-disaster assessments (seismic, flood, severe weather, back-up power, etc.) on County critical facilities based on information determined in Action #CC-21.</p> <p>Comment: Carry Over – See Action #CC-22 in updated Action Plan.</p>		X	
<p>Based on information from Action #CC-22, identify and prioritize County critical facilities to target for retro-fit and back-up power, or most likely to require an alternate site during a major event or disaster.</p> <p>Comment: Carry Over – See Action #CC-23 in updated Action Plan.</p>		X	
<p>Based on the information gathered in Actions #CC-22 & CC-23, procure and install alternate/back-up power generators and/or emergency generator quick connect hook-ups in County critical facilities as funding becomes available. Install and maintain surge protection on critical electronic equipment.</p> <p>Comment: Carry Over – Public Works has installed a permanent generator at the operations center and quick connect hook-ups at the rural shed locations for use with portable or trailer mounted generators. See Action #CC-24 in updated Action Plan.</p>		X	

1.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-10 lists the actions that make up the Clark County hazard mitigation action plan. Table 1-10 identifies the priority for each action. Table 1-11 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 1-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
CC-1—Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.						
Existing	All Hazards	4, 5, 7, 9, 10	Public Works- Construction & Design* / Community Development- Building Safety	High	HMGP, PDM, FMA, CDBG-DR	Short-term
CC-2—Integrate the hazard mitigation plan into other plans, programs, ordinances, codes and databases that dictate land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community. Ensure managers and planners within responsible departments are aware of the hazard mitigation plan, the information contained within it, and its potential for integration. Do so through direct engagement, training and education.						
New and Existing	All Hazards	2, 4	Community Planning* / Community Development / Public Works / Public Health / Emergency Management Coordinator(*engagement & education)	Low	Staff Time, General Funds	On-going
CC-3—Develop and implement a program to capture perishable data during and after significant events (e.g. high water marks, preliminary damage estimates, damage photos) and integrate into our response in order to support our partners and future mitigation efforts including the update, implementation and maintenance of the hazard mitigation plan. Support the establishment of a county-wide repository for capturing this information.						
Existing	All Hazards	1, 2, 4, 12	Emergency Management Coordinator* / Public Works- OPS	Low	Staff Time, General Funds	Short-term
CC-4—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Emergency Management Coordinator* / All County Departments (as needed)	Low	Staff Time, General Funds	Ongoing
CC-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan. Share lessons learned and mitigation success stories and actively participate in progress reporting.						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
New and Existing	All Hazards	1, 4	Emergency Management Coordinator	Low	Staff Time, General Funds	Ongoing
<p>CC-6—Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP:</p> <ul style="list-style-type: none"> • Enforcement of the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. 						
New and Existing	Flood	1, 4, 5, 9	Public Works-Construction & Design	Low	Staff Time, General Funds	On-going
<p>CC-7— Work with building officials to identify ways to improve our jurisdiction’s BCEGS classification.</p>						
New	Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire	5, 6, 7, 10, 12	Community Development-Building Safety	Low	Staff Time, General Funds	Short-term
<p>CC-8—In cooperation with our participating jurisdictional partners, establish a schedule for review and maintenance of the Regional Disaster Debris Management Plan. Where feasible, seek opportunities to expand the Plan.</p>						
Existing	All Hazards	1, 2, 4, 6	Public Works-Emergency Management Coordinator* / Public Health - Solid Waste / Internal Services - Procurement /	Medium	Staff Time, General Funds, Interns, EMPG	Short-term
<p>CC-9— Maintain the County CRS classification and where appropriate take steps to improve our CRS classification.</p>						
New and Existing	Flood, Dam Failure	1, 6, 7, 9, 10, 11, 12	Public Works-Construction & Design	Low	Staff Time, General Funds	Short-term
<p>CC-10—Establish a program to encourage voluntary structural retro-fitting of older homes on vulnerable soils by providing information and resources during scheduled public outreach events and when requested.</p>						
Existing	Earthquake	1, 2, 8, 9	Community Development-Building Safety	Low	Staff Time, General Funds	Short-term
<p>CC-11—Establish a program to encourage voluntary non-structural and structural retro-fitting throughout the County by providing information and resources during scheduled public outreach events and when requested.</p>						
Existing	Earthquake	1, 2, 5, 9, 10,	Community Development-Building Safety	Low	Staff Time, General Funds	Short-term
<p>CC-12—Establish a program to encourage structural retro-fitting of hazardous materials containment during Clark County Fire Marshal operational permit inspections.</p>						
Existing	Earthquake, Flood, Severe Weather, Dam Failure	1, 4, 6, 8, 9, 10, 11	Community Development- Fire Marshal*	Low	Staff Time, General Funds	Short-term
<p>CC-13— Establish a program to encourage non-structural retro-fitting of hazardous materials containment during Clark County Fire Marshal annual facilities visits.</p>						
Existing	Earthquake	1, 4, 6, 8, 9, 10	Community Development- Fire Marshal*	Low	Staff Time, General Funds	Short-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
CC-14—Establish a program to encourage and assist residents in understanding the benefits of defensible space to minimize and reduce the impacts of fires during public outreach opportunities and the Spring Wildfire Campaign.						
New and Existing	Wildfire	1, 2, 4, 6, 10	Community Development- Fire Marshal*	Low	Staff Time, General Funds	Short-term
CC-15— Develop a program within the Community Development Department (Building Safety) to review the unincorporated area critical facilities list from the hazard mitigation plan, prioritize the list, and conduct outreach and education to owners concerning pre-disaster assessments.						
Existing	Severe Weather, Flood, Landslide, Wildfire, Wildfire	1, 2, 8, 9, 10	Community Development- Building Safety*/ Fire Marshal	Medium	Staff Time, General Funds	Short-term
CC-16—Develop a standard hazards planning map in GIS using the best available information. Include layers for each of the hazards identified in the hazard mitigation plan. In addition, create a map layer of the known shallow flood areas based on information from Public Works, and other layers including liquefaction and critical facilities and transportation infrastructure. Once complete, integrate this mapping into planning. New layers should be added as a need is identified. Share within the County Government and with our planning partners.						
New and Existing	All Hazards	4, 6, 12	Clark County GIS Department* / Emergency Management Coordinator / Public Works/ Community Development / Public Health / CRESA	Low	Staff Time, General Funds	Short-term
CC-17—Verify, update, and expand the hazard mitigation information on county department internet websites. Establish a hazard mitigation webpage on the Clark County internet website with links to pertinent hazard mitigation topics and information from County Departments (I.E. retro-fit information, defensible space, etc.) to support public outreach and education as well as other action items. Include a link to the hazard mitigation plan and information on CRESA’s website.						
New and Existing	All Hazards	1, 4, 6	Communications Office* / Emergency Management Coordinator / Community Planning / Community Development / Public Works / Public Health	Low	Staff Time, General Funds	Short-term
CC-18—Continue our participation in the Great Washington SHAKEOUT drill throughout the County Government. Exercise the ENS system during the drill. Conduct de-briefings and collect lessons learned and improve our procedures to enhance earthquake preparedness and employee safety. Encourage the public to participate as well, using social media, website, and other public outreach methods.						
Existing	Earthquake	1, 3, 10	Emergency Management Coordinator */ All Departments	Low	Staff Time, General Funds	On-going
CC-19—Continue the hazard mitigation information section in the annual newsletter mailing to the special flood hazard area. Include hazard information and resources as part of our public outreach.						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
New and Existing	Flood, Severe Weather	1, 6	Public Works-PIO* / Emergency Management Coordinator	Low	Staff Time, General Funds	Ongoing
CC-20— Where feasible, continue to encourage and support efforts to re-open/improve access roads into the County forest for fire suppression and fuel breaks. Maintain progress made and support thinning and other mitigation measures at Camp Bonneville.						
New and Existing	Wildfire	4, 10, 11	Public Works – Parks / Forestry	High	PDM	Short-term
CC-21— Identify and prioritize County critical facilities based on function and potential for use during incidents as a result of each hazard of concern. Take into account known vulnerabilities during prioritization. Where feasible, take advantage of opportunities to support County departments Continuity Of Operations Plan (COOP) development.						
Existing	All Hazards	2, 3, 4, 10	Emergency Management Coordinator* / County Manager & Directors of all County Departments	Medium	Staff Time, General Funds , EMPG	Short-term
CC-22—Conduct pre-disaster assessments (seismic, flood, severe weather, back-up power, etc.) on County critical facilities based on information determined in Action #CC-21.						
Existing	Severe Weather, Earthquake, Flood, Landslide, Wildfire	2, 3, 4, 8, 10	County Risk Manager* / Emergency Management Coordinator / Community Development-Building Safety / Public Works-Engineering / Internal Services-Facilities Management	Medium	Staff Time, General Funds	Short-term
CC-23- Based on information from Action #CC-22, identify and prioritize County critical facilities to target for retro-fit and back-up power, or most likely to require an alternate site during a major event or disaster.						
Existing	All Hazards	3, 6, 8, 10	Emergency Management Coordinator*/ Internal Services-Facilities Management	Low	Staff Time, General Funds	Short-term
CC 24—Based on the information gathered in Actions #CC-22 & CC-23, procure and install alternate/back-up power generators and/or emergency generator quick connect hook-ups in County critical facilities as funding becomes available. Install and maintain surge protection on critical electronic equipment.						
Existing	All Hazards	3, 6, 8, 10	Internal Services-Facilities Management* / Information Technology / Emergency	High	HMGP, PDM	Long-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
Management Coordinator						

a. * denotes lead agency

Table 1-11. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
CC-1	5	High	High	Yes	Yes	No	Medium	High
CC-2	2	Medium	Low	Yes	No	Yes	High	Low
CC-3	4	Low	Low	Yes	No	Yes	High	Low
CC-4	12	Low	Low	Yes	No	Yes	High	Low
CC-5	2	Low	Low	Yes	No	Yes	High	Low
CC-6	4	Medium	Low	Yes	No	Yes	High	Low
CC-7	5	Medium	Low	Yes	No	Yes	High	Low
CC-8	4	Medium	Medium	Yes	Yes	No	Medium	High
CC-9	7	Medium	Low	Yes	No	Yes	High	Low
CC-10	4	Medium	Low	Yes	No	Yes	High	Low
CC-11	5	Medium	Low	Yes	No	Yes	High	Low
CC-12	7	Medium	Low	Yes	No	Yes	High	Low
CC-13	6	Medium	Low	Yes	No	Yes	High	Low
CC-14	5	Medium	Low	Yes	No	Yes	High	Low
CC-15	5	Medium	Medium	Yes	No	No	Medium	Low
CC-16	3	Low	Low	Yes	No	Yes	High	Low
CC-17	3	Low	Low	Yes	No	Yes	High	Low
CC-18	3	Medium	Low	Yes	No	Yes	High	Low
CC-19	2	Low	Low	Yes	No	Yes	High	Low
CC-20	3	High	High	Yes	Yes	No	Medium	High
CC-21	4	Medium	Medium	Yes	Yes	No	Medium	High
CC-22	5	Medium	Medium	Yes	No	No	Medium	Low
CC-23	4	Low	Low	Yes	No	Yes	High	Low
CC-24	4	Medium	High	No	Yes	No	Low	Medium

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

Table 1-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	CC-2, CC-3, CC-4, CC-5, CC-6, CC-8, CC-9, CC-16	CC-1, CC-6, CC-9, CC-12	CC-4, CC-6, CC-9, CC-12, CC-16, CC-17	CC-9	CC-8, CC-9, CC-16, CC-21, CC-23, CC-24	CC-9, CC-12

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Drought	CC-2, CC-3, CC-4, CC-5	CC-1	CC-4, CC-17		CC-21, CC-24	
Earthquake	CC-2, CC-3, CC-4, CC-5, CC-7, CC-8, CC-18	CC-1, CC-7, CC-10, CC-11, CC-12, CC-13	CC-4, CC-10, CC-11, CC-12, CC-13, CC-15, CC-16, CC-17, CC-18, CC-22, CC-23		CC-8, CC-15, CC-16, CC-18, CC-21, CC-22, CC-23, CC-24	CC-12
Flood	CC-2, CC-3, CC-4, CC-5, CC-6, CC-7, CC-8, CC-9, CC-16	CC-1, CC-6, CC-7, CC-9, CC-12	CC-4, CC-6, CC-9, CC-12, CC-15, CC-16, CC-17, CC-19, CC-22, CC-23	CC-9	CC-8, CC-15, CC-16, CC-21, CC-22, CC-23, CC-24	CC-9, CC-12
Landslide	CC-2, CC-3, CC-4, CC-5, CC-7, CC-8, CC-16	CC-1, CC-7	CC-4, CC-15, CC-16, CC-17, CC-22, CC-23		CC-8, CC-15, CC-16, CC-21, CC-22, CC-23, CC-24	
Severe Weather	CC-2, CC-3, CC-4, CC-5, CC-7, CC-8	CC-1, CC-7, CC-12	CC-4, CC-12, CC-15, CC-16, CC-17, CC-19, CC-22, CC-23		CC-8, CC-15, CC-16, CC-21, CC-22, CC-23, CC-24	CC-12
Volcano	CC-2, CC-3, CC-4, CC-5, CC-7, CC-8	CC-1, CC-7	CC-4, CC-16, CC-17		CC-8, CC-21, CC-24	
Wildfire	CC-2, CC-3, CC-4, CC-5, CC-7, CC-14, CC-20	CC-1, CC-7	CC-4, CC-14, CC-15, CC-16, CC-17, CC-22, CC-23	CC-20	CC-8, CC-15, CC-16, CC-21, CC-22, CC-23, CC-24	

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

1.10 Future Needs to Better Understand Risk/Vulnerability

The following information was identified as having the potential to increase the understanding of risk and vulnerability in Clark County:

- Detailed study of the cascading effects resulting from a large or very large earthquake on the Cascadia or Portland Hills fault.
- Detailed information on building stock construction types in the planning area.
- Detailed flood mapping of the Lewis River system.
- As science improves, better understanding and future mapping of landslide runout areas/zones.

2. CITY OF BATTLE GROUND

2.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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2.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—June 18, 1951
- Current Population—20,743 as of April 1, 2020 (Washington State Office of Financial Management)
- Population Growth—The population of Battle Ground slowly grew from the 1950s through 1980s. Like many other cities within the county, Battle Ground experienced a large increase in population from the late 1990s through the 2000s. Since 2007, the City has experienced a period of rather slow growth. Upcoming growth projections anticipate an increase in population to 39,309 persons estimated in 2035.
- Location and Description—Battle Ground is located in the heart of Clark County, Washington, just six miles from Interstate 5. The community lies between the Pacific Ocean and the Cascade Mountains, providing citizens and visitors with scenic and pristine landscapes.
- Brief History—On the 26th of May, 1951, a special election was held to determine whether or not a corporation to be known as the Town of Battle Ground should be established. Voters approved the incorporation of the new town and at the same time elected its first city council and its first mayor, Mr. P.L. Rasmussen. Washington State recognized the incorporation of the Town of Battle Ground, population 742, on June 18, 1951. Eventually, the Town of Battle Ground became the City of Battle Ground and the population has grown to over 20,000.
- Climate—The City is sheltered by the Cascade Mountains to the east and the Coast Range to the west. The climate is generally mild, with average temperatures ranging from 42 degrees in winter to 76 degrees during the summer months. Battle Ground is at an altitude of 280 feet above sea level. The average annual precipitation is 69.06 inches.
- Governing Body Format—The citizens of Battle Ground voted to adopt the Council-Manager form of government in 1997. Under this form of government, the City Council is responsible for the legislative function of the city such as establishing policy, passing local ordinances, approving budget appropriations, and developing an overall vision. The Council appoints a professional City Manager to implement its policies, serve as advisor, and oversee administrative operations. The City Manager assumes responsibility for the adoption of this plan; the Public Works Director will oversee its implementation.

- Development Trends—Population and corresponding new development within the Urban Growth Area for the City of Battle Ground have grown significantly since 1995 resulting in the City annexing approximately 682 acres. The majority of this land has been designated for residential use, though some of this land has been designated for industrial and business park use. The City of Battle Ground’s Comprehensive Plan will guide development in the City. The plan provides broad guidance on development practices within the City to address the concerns reflected in the Growth Management Act. The plan is intended to reflect expected growth for a 20-year period.

2.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 2-1. An assessment of fiscal capabilities is presented in Table 2-2. An assessment of administrative and technical capabilities is presented in Table 2-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 2-4. Classifications under various community mitigation programs are presented in Table 2-5. An assessment of education and outreach capabilities is presented in Table 2-6.

Table 2-1. Legal & Regulatory Capabilities			
Code	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: BGMC 15.104 Ord 95-769	Yes	No	Yes
Zoning Code Comment: BGMC 17.101 Ord 95-769	Yes	No	Yes
Subdivisions Comment: BGMC 16.115 Ord 99-008	Yes	No	Yes
Stormwater Management Comment: BGMC 18.250 Ord 96-802	Yes	No	Yes
Post-Disaster Recovery Comment: None	No	No	No
Real Estate Disclosure Comment: None	No	No	No
Growth Management Comment: BGMC 17.101.020 Ord 95-769	Yes	No	Yes
Site Plan Review Comment: BGMC 17.143 Ord 95-769	Yes	No	No
Environmental Protection Comment: BGMC 18.100 Ord 00-015	Yes	No	Yes
Flood Damage Prevention Comment: BGMC 18.310 Ord 04-025	Yes	No	Yes
Emergency Management Comment: BGMC 2.74 Ord 06-03	Yes	No	Yes
Climate Change Comment: None	No	No	No
Other Comment: None	No	No	No
General or Comprehensive Plan Is the plan equipped to provide linkage to this mitigation plan? No Comment: BGMC 17.101.040 Ord 95-769 1995	Yes	No	Yes
Capital Improvement Plan Comment: Water, Sewer, Stormwater, Transportation. Updated as necessary or required.	Yes	No	Yes
Floodplain or Watershed Plan	Yes	No	No

Table 2-1. Legal & Regulatory Capabilities			
Code	Local Authority	Other Jurisdiction Authority	State Mandated
<i>Comment:</i> BGMC 18.310 Ord 04-025			
Stormwater Plan	Yes	Yes	Yes
<i>Comment:</i> August 2015 Ord 15-07			
Habitat Conservation Plan	Yes	No	No
<i>Comment:</i> BGMC 18.280 Ord 04-025			
Shoreline Management Plan	Yes	No	Yes
<i>Comment:</i> February 2021 Ord 2021-13			
Community Wildfire Protection Plan	No	No	No
<i>Comment:</i> None			
Forest Management Plan	No	No	No
<i>Comment:</i> None			
Climate Action Plan	No	No	No
<i>Comment:</i> None			
Water System Emergency Response Plan	Yes	No	Federal
<i>Comment:</i> December 2021			
Comprehensive Emergency Management Plan	Yes	Yes	Yes
<i>Comment:</i> BGMC 2.74 Ord 06-03			
Threat & Hazard Identification & Risk Assessment	No	No	No
<i>Comment:</i> None			
Post-Disaster Recovery Plan	No	No	No
<i>Comment:</i> None			
Continuity of Operations Plan	No	No	No
<i>Comment:</i> None			
Public Health Plan	No	Yes	No
<i>Comment:</i> None – Plan administered by the Clark County Public Health Dept.			

Table 2-2. 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	Yes – Utility Taxes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 2-3. Administrative and Technical Capability		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Department/ City of BG / Planning Supervisor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works Department / City of BG / City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Public Works Department / City of BG / City Engineer

Staff/Personnel Resources	Available?	Department/Agency/Position
Staff with training in benefit/cost analysis	Yes	Public Works Department / City of BG / City Engineer
Surveyors	No	
Staff capable of making substantial damage estimates	Yes	Public Works Department / City of BG / City Engineer
Personnel skilled or trained in GIS applications	Yes	Public Works Department / City of BG / Engineering & Planning personnel
Scientist familiar with natural hazards in local area	No	
Emergency manager	No	The City considers CRESA as our emergency management provider
Grant writers	Yes	Public Works Department / City of BG / Engineering personnel

Table 2-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	04/15/1981
When did the Flood Insurance Rate maps become effective?	09/05/2012
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Community Development / Community Development Director
Is this a primary or auxiliary role?	Primary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	2004
Does your floodplain management program meet or exceed minimum requirements?	Meet
If so, in what ways?	
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
If so, please state what they are.	
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
If no, please state why.	
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)?	No
If so, is your jurisdiction seeking to improve its CRS Classification?	
If not, is your jurisdiction interested in joining the CRS program?	No
How many Flood Insurance policies are in force in your jurisdiction? ^a	17
What is the insurance in force? ^a	\$4,579,000
What is the premium in force? ^a	\$9,025
How many total loss claims have been filed in your jurisdiction? ^a	3
How many claims were closed without payment/are still open? ^a	1
What were the total payments for losses? ^a	\$3,265.40

a. According to FEMA records as of 3/30/2022.

Table 2-5. Community Classifications

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

Table 2-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes – We have a dedicated Public Information Officer.
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No
If yes, please briefly describe.	N/A
Do you utilize social media for hazard mitigation education and outreach?	Yes
If yes, please briefly describe.	City Website, Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
If yes, please briefly specify.	
Do you have any other programs already in place that could be used to communicate hazard-related information?	No
If yes, please briefly describe.	
Do you have any established warning systems for hazard events?	No
If yes, please briefly describe.	

2.3.1 Discovery Clean Water Alliance

The City of Battle Ground is a member of the Discovery Clean Water Alliance, which was legally formed on January 4, 2013. The Alliance serves four Member agencies – the City of Battle Ground, Clark County, Clark Regional Wastewater District and the City of Ridgefield. The Members jointly own and jointly manage regional wastewater assets under Alliance ownership through an interlocal framework established under the Joint Municipal Utility Services Act (RCW 39.106). The Alliance seeks to optimize the long-term framework for delivery of regional wastewater transmission and treatment services to the urban growth areas in the central portion of Clark County, Washington.

2.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

2.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- Battle Ground Municipal Code 18.310 stipulates that the purpose of the chapter is to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by methods and provisions designed for by restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities. This flood damage prevention ordinance regulates areas in the special flood hazard areas designated by FEMA. This data forms the basis of the flood risk assessment for the hazard mitigation plan.
- Battle Ground Municipal Code 18.320 stipulates the shoreline master program (SMP) is to implement the goals, policies, regulations, and procedures set forth by the Shoreline Management Act of 1971, as amended, and all applicable provisions contained in the Washington Administrative Code. All goals currently in place are consistent with Washington Administrative Code.

- Battle Ground Municipal Code 18.260 stipulates that the director, to the extent practical, shall review development for compliance with critical area regulations (with the triggering development application). Where there are no triggering applications, determination of the type of application shall be based upon the criteria in BGMC [17.200.035](#). Determinations of compliance with this title shall be appealable along with the decision on the underlying permit application through BGMC [17.200.140](#). (Ord. 04-025 § 3 (part), 2004).

1.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Further development and involvement with Clark County, City of Ridgefield, and Clark Regional Wastewater District in the Discover Clean Water Alliance.
- Further development and involvement with Clark County and the City of Vancouver in the ongoing development of the Disaster Debris Response Plan.
- Further development of the City of Battle Ground Comprehensive Plan including the addition of the Hazard Mitigation Plan by reference.

2.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 2-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Tornado	DR-4253	December 10, 2015	\$23,970
Tornado	N/A	May 11, 2000	\$11,392
Lightning	N/A	July 13, 1993	\$819
Tornado	N/A	October, 1951	Unknown
Volcanic Eruption, Mt. St. Helens	DR-623	May 21, 1980	Unknown
Storms, High Winds, Floods	DR1079	November 7, 1995	Unknown
Earthquake	DR1361	February 28, 2001	Unknown
Severe Winter Storm, Landslides, and Mudslides	DR-1682	December 14, 2006	Unknown
Severe Winter Storm and Record and Near Record Snow	DR-1825	December 12, 2008	Unknown
COVID-19 Pandemic	DR-4481	January 20, 2020	Unknown

2.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- The City’s main water line which replenishes the city’s water storage reservoirs crosses in the vicinity of potential landslide territory.
- Water Wells 4, 5, and 6 do not have backup generators.
- The Battle Ground Community Center would likely serve as a public shelter after a major event does not have a backup generator.

2.7 HAZARD RISK RANKING

Table 2-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	51	Medium
2	Earthquake	48	Low
3	Landslide	18	Low
4	Flood	12	Low
5	Wildfire	8	Low
6	Drought	3	Low
7	Volcano	1	Low
8	Dam Failure	0	None

2.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 2-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. It should be noted, that the actions identified in the following table were developed in 2004. Due to the significant amount of time and staff turnover that has occurred since their identification, the status of some actions may be unknown. Additionally, some action items were identified for jurisdictions where the lead agency identified for implementation was outside of the jurisdiction.

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Encourage non-structural retrofitting throughout the County. Comment: Worked to be completed by CRESA – Unknown if this has been completed. No status Update.		X	
Support the retrofit of at-risk homes in subdivisions Comment: Continue to support the retrofitting of at-risk homes. No status update.		X	
Retrofit hazardous material containment areas. Comment: Continue to support the ongoing retrofitting of hazardous material containment. No status update		X	
Encourage non-structural retrofitting of hazardous materials containment Comment: Continue to support – No status update		X	
Develop public information packets ready to deploy following a disaster event Comment: No status update known.		X	
Expand weather radio systems to include all of Clark County Comment: Status update unknown.		X	
Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy Comment: Status update unknown		X	
Determine critical government functions and establish redundancy for these functions. Comment: Status update unknown		X	
Develop preparedness efforts of Tier II hazardous material facilities.		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Comment: Status update unknown. Develop a contingency/Business resumption organization.		X	
Comment: Status update unknown. Develop integrated County stormwater basin-wide plans		X	
Comment: Work is ongoing Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.		X	
Comment: Ongoing Develop priority routes throughout the county and improve these routes to a higher standard.		X	
Comment: Status update unknown Ensure appropriate equipment is available during events.		X	
Comment: Ongoing			

2.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 2-10 lists the actions that make up the City of Battle Ground hazard mitigation action plan. Table 2-11 identifies the priority for each action. Table 2-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 2-10. Hazard Mitigation Action Plan Matrix 2023-2028

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency ^a	Estimated Cost	Sources of Funding	Timeline
BG-1 Existing	Encourage non-structural retrofitting throughout the County Earthquakes	1,2,4,7	CRESA – Lead Agency / Battle Ground Support Agency	Low	Owner’s Expense/BG Staff time to assist in distributing information created by CRESA	On-going
BG-2 Existing	Support the retrofit of at-risk homes in subdivisions Wildland Fires	2,4,7,9	Fire Marshall Lead Agency/ BG Community Development Support Agency	Medium	Owner’s Expense/BG Staff time to assist in distributing information created by the Fire Marshall’s Office	On-going
BG-3 Existing	Retrofit hazardous material containment areas Earthquake	4,7,9,12	Fire Marshall Lead Agency/ BG Community Development Support Agency	High	Owner’s Expense, SBA Loans, DHS/FEMA Grant/ BG Staff time to assist in distributing information created by the Fire Marshall’s Office	Long-Term

BG-4	Encourage non-structural retrofitting of hazardous materials containment	Existing	Earthquake	1,2,4,7	Fire Marshall & CRESA Lead Agencies/ BG Community Development Support Agency	Low	Owner's Expense/ BG Staff time to assist in distributing information created by the Fire Marshall's Office and/or CRESA	Ongoing
BG-5	Develop public information packets ready to deploy following a disaster event	Existing	All Hazards	1,2,3,4	CRESA – Lead Agency / Battle Ground Support	Medium	BG Staff time to assist in distributing information created by CRESA	Short-Term
BG-6	Expand weather radio systems to include all of Clark County	Existing	Severe Weather	3,8	CRESA – Lead Agency / Battle Ground Support	High	FEMA Grant	Long-Term
BG-7	Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy	Existing	Earthquake	6,10,12	BG Public Works/BG Building Dept.	Low	BG Staff Time / Operating Budget	Short-Term
BG-8	Determine critical government functions and establish redundancy for these functions	Existing	All Hazards	6,12	BG Risk Management / CRESA Support	Low	BG & CRESA Staff Time / Operating Budget	Short-Term
BG-9	Develop preparedness efforts of Tier II hazardous material facilities	Existing	Earthquakes	1,4,5,7	Fire Marshall Lead Agency / BG Community Development Support Agency	Low	BG Staff Time/ Owner's Expense	Long-Term
BG-10	Develop a contingency/Business resumption organization	Existing	All Hazards	1,4,6,10	CRESA Lead Agency / BG Chamber of Commerce Support Agency / BG Support Agency	Medium	CRESA Staff Time / BG Staff Time	Long-Term
BG-11	Develop integrated County stormwater basin-wide plans	Existing	Floods	4,6,11	Clark County Clean Water Services Lead Agency /BG Public Works Support Agency	Low	Clark County Staff Time / BG Staff Time / Operating Budget	Ongoing
BG-12	Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events	Existing	All Hazards	2,4	Public Works Lead Agency	Medium	BG Staff Time / Operating Budget	Ongoing
BG-13	Develop priority routes throughout the county and improve these routes to a higher standard	Existing	All Hazards	4	Clark County Public Works Lead Agency / BG Public Works support Agency / WSDOT Support Agency	High	Clark County Staff Time / BG Staff Time	Ongoing
BG-14	Ensure appropriate equipment is available during events							

Existing	All Hazards	4,10	BG Public Works	Low	Operating Budgets	Ongoing
BG-15 Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.						
Existing	All Hazards	4, 5, 7, 9, 10	BG Community Development	High	HMGP, PDM, FMA, CDBG-DR	Short-term
BG-16 Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: Enforcement of the flood damage prevention ordinance Participate in floodplain identification and mapping updates Provide public assistance/information on floodplain requirements and impacts.						
New and Existing	Flood	1, 4, 5, 9	BG Community Development	Low	BG Staff Time / General Fund	Ongoing
BG-17 Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.						
New and Existing	All Hazards	2, 4	BG Community Development	Low	BG Staff Time / General Funds	Ongoing
BG-18 Install a back up generator at the community center to enable operation when the power is not available						
New	Earthquakes, Severe Storms	8	BG Public Works	High	FEMA Grant, General Funds	Medium-term
BG-19 Add generators or generator plug at well sites that don't have them						
New	Earthquakes, Severe Storms	8	BG Public Works	High	FEMA Grant, General Funds	Medium-term

Table 2-11. Mitigation Strategy Priority Schedule

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

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

Table 2-12. Analysis of Mitigation Actions

Action Addressing Hazard, by Mitigation Type ^a						
Hazard Type	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	BG-8, BG-10, BG-16, BG-17	BG-15, BG-16	BG-5, BG-16		BG-12, BG-13, BG-14	
Drought	BG-8, BG-10, BG-17	BG-15	BG-5		BG-12, BG-13, BG-14	
Earthquake	BG-1, BG-3, BG-4, BG-7, BG-8, BG-9, BG-10, BG-17	BG-1, BG-3, BG-15	BG-1, BG-4, BG-5, BG-9	BG-9	BG-3, BG-6, BG-8, BG-12, BG-13, BG-14, BG-18, BG-19	BG-6
Flood	BG-8, BG-10, BG-16, BG-17	BG-15, BG-16	BG-5, BG-16	BG-11	BG-12, BG-13, BG-14	
Landslide	BG-8, BG-10, BG-17	BG-15	BG-5		BG-12, BG-13, BG-14	
Severe Weather	BG-8, BG-10, BG-17	BG-15	BG-5		BG-6, BG-8, BG-12, BG-13, BG-14, BG-18, BG-19	BG-6
Volcano	BG-8, BG-10, BG-17	BG-15	BG-5		BG-12, BG-13, BG-14	
Wildfire	BG-8, BG-2, BG-10, BG-17	BG-2, BG-15	BG-2, BG-5		BG-12, BG-13, BG-14	

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

3. CITY OF CAMAS

3.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Lauren Hollenbeck, Senior Planner
616 NE 4th Avenue
Camas, WA 98607
Telephone: 360-817-1568
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Alternate Point of Contact

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e-mail Address: swall@cityofcamas.us

3.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—1906
- Current Population— 26,065 as of April 1, 2020 (2020 Office of Financial Management estimates)
- Population Growth—Based on data tracked by the Office of Financial Management, Camas has experienced a fairly steady growth rate. The overall population has increased approximately 12 percent from 22,843 in 2015 to 26,065 in 2020, an average 2.4 percent per year increase during this time frame.
- Location and Description—The City of Camas is located in Clark County, Washington, west of the Columbia River gorge and approximately 20 miles north of Portland, Oregon. The City is bordered by the Columbia River to the south, the City of Washougal and Woodburn Hill to the east, Lacamas Lake and Lacamas Lake Park to the north, and Grass Valley and the City of Vancouver to the west. It sits north of Highway 14 across the Columbia River from the City of Gresham, Oregon. Camas’ downtown and older parts of the City are fairly flat, almost at the same level of the Columbia River, and surrounded by steep slopes.
- Brief History—In the late 1800’s, hundreds of Native Americans camped along the Columbia River. The name for the City of Camas comes from the lily-like camas plant, an important part of the Native American diet in the Northwest, and widely found in this area. The first settlers arrived to Camas in the mid 1800’s. In 1883, the LaCamas Colony Company of Portland selected this area for their new paper mill, the largest paper mill west of the Rocky Mountains. Mr. Henry L. Pittock, the owner of the Oregonian newspaper needed plenty of water to power paper-making machines for his newspaper and found it in the nearby lakes. Camas was incorporated in 1906 and by 1928 the paper mill was owned and operated by the Crown-Zellerbach Corporation. Today, Crown-Zellerbach is known as Georgia Pacific. From the 1990s through today, Camas experienced significant growth in residential development and in the technology and manufacturing industries due to land annexations.
- Climate—Camas’ climate is influenced by the Coast and Cascade mountain ranges. Prevailing winds are from the northeast from April through September, and from the east-southeast for the rest of the year. Occasional high easterly winds occur year-round through the Columbia Gorge. Annual average precipitation is 51 inches. The month of December generally receives the most precipitation, with an

average of 6.5 inches, and July receives the least, with a half-inch. The average mid-winter temperature is 40 degrees, the summer average is 65 degrees, and the annual average temperature is 53 degrees.

- **Governing Body Format**—Camas uses the “Mayor-Council” form of government which consists of an elected mayor, who serves as the city’s chief administrative officer, and a council, which serves as the municipality’s legislative body. Additionally, the City has a professional City Administrator to assist the Mayor with administrative and polity related duties. The City consists of nine departments: City Administration, Community Development, Fire, Finance, IT, Library, Parks & Recreation, Police and Public Works. The City has 10 committees, commissions and task forces, which report to the City Council. The City Council assumes responsibility for the adoption of this plan; the City Administrator will oversee its implementation.
- **Development Trends**—Anticipated development levels for Camas are high, consisting primarily of residential development. In 2015, Camas approved the Green Mountain Planned Residential Development Mixed Use Master Plan to include 1,300-1,400 residential units and commercial uses, the largest mixed use development in the city’s recent history. There has also been a focus on affordable housing and a push for more accessory dwelling units, secondary “mother-in-law” units, on properties. Camas adopted its comprehensive plan in 2016, which provides polices and recommendations to direct public and private decisions affecting future growth and development. City actions, such as those relating to growth, land use, transportation, public facilities and services, parks, and open space must be consistent with the plan.

3.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 3-1. An assessment of fiscal capabilities is presented in Table 3-2. An assessment of administrative and technical capabilities is presented in Table 3-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 3-4. Classifications under various community mitigation programs are presented in Table 3-5. An assessment of education and outreach capabilities is presented in Table 3-6.

Table 3-1. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: Camas Municipal Code (CMC) Chapter 15.04.010; adopts the most current State Building Code as amended.	Yes	No	Yes
Zoning Code Comment: CMC Title 18 Zoning: Ord. 2515 § 1 (Exh.A (part)), 2008; Ord. 2443 § 3 (Exh. A (part)), 2006)	Yes	No	Yes
Subdivisions Comment: CMC Chapter 17.11 Subdivisions; Ord. 21-005 2021, Ord. 19-001 2019, Ord. 18-014 2018, Ord. 2612 2011, Ord. 2483, 2007	Yes	No	Yes
Stormwater Management Comment: CMC Chapter 14.02 Stormwater Control: Ord. 2582, § I, 2-1-2010- adopts the 2005 Ecology Stormwater Manual and Camas Stormwater Design Standards Manual Res. 1193 adopted July 2010.	Yes	Yes	Yes
Post-Disaster Recovery Comment: None at this time.	No	No	No
Real Estate Disclosure Comment: WA State Disclosure Law- RCW 64.06	No	Yes	Yes
Growth Management Comment: The City is in compliance and good standing with the Washington Growth Management Act of 1990 with its land-use policies identified in its comprehensive plan (June 2016 update) and municipal code.	Yes	No	Yes
Site Plan Review	Yes	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: CMC Chapter 18.18 Site Plan Review: Ord. 21-005 2021, Ord. 2612 2011, Ord. 2515 2008, Ord. 2481, 2007, Ord. 2443, 2006			
Environmental Protection	Yes	No	Yes
Comment: CMC Chapter 16.51 Critical Areas: Ord. 18-014 2018, Ord. 17-002 2017, Ord. 2691 2014, Ord. 2517 2008; 2008; Shoreline Master Program adopted 2021			
Flood Damage Prevention	Yes	Yes	Yes
Comment: CMC Chapter 16.57 Frequently Flooded Areas: Ord. 21-006 2021, Ord. 2691 2014, Ord. 2647 2012, Ord. 2517 2008			
Emergency Management	Yes	No	Yes
Comment: 2016 Draft Comprehensive Emergency Management Plan			
Climate Change	No	No	No
Comment: None at this time.			
Other	No	No	No
Comment: None at this time.			
General or Comprehensive Plan	Yes	No	Yes
Is the plan equipped to provide linkage to this mitigation plan? No			
Comment: 2035 City of Camas Comprehensive adopted in June 2016			
Capital Improvement Plan	Yes	No	Yes
What types of capital facilities does the plan address? Roads, water and sewer			
<i>How often is the plan updated?</i> 6 year CIP, Reviewed and updated annually.			
Comment:			
Floodplain or Watershed Plan	No	No	No
Comment: None at this time.			
Stormwater Plan	Yes	No	No
Comment: Comprehensive Stormwater Drainage Plan April 2013			
Habitat Conservation Plan	No	No	No
Comment: None at this time.			
Shoreline Management Plan	Yes	No	Yes
Comment: Ord. 21-003 Feb. 2021			
Community Wildfire Protection Plan	No	No	No
Comment: None at this time.			
Forest Management Plan	No	No	No
Comment: None at this time.			
Climate Action Plan	No	No	No
Comment: None at this time.			
Housing Action Plan	Yes	No	No
Comment: Res. 21-006 July 2021			
Comprehensive Emergency Management Plan	Yes	No	Yes
Comment: Adopted/approved 2006, currently being revised.			
Threat & Hazard Identification & Risk Assessment	No	No	No
Comment: None at this time.			
Post-Disaster Recovery Plan	No	No	No
Comment: None at this time.			
Continuity of Operations Plan	No	No	No
Comment: None at this time.			
Public Health Plan	No	Yes	No
Comment: Region IV Public Health Emergency Response Plan Dec. 2013			

Table 3-2. 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	Yes (water, sewer, stormwater)
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 3-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Department – 1 Community Development Director, 1 Planning Manager, 2 Senior Planners, 1 Planner, 1 Project Manager
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community Development- 1 Building Official, 2 Building Inspectors. Utilities Department (21 water/sewer/storm water employees).
Planners or engineers with an understanding of natural hazards	Yes	Community Development- 1 Senior Planner; Engineering- 1 Engineer; could contract with others for expertise in this field
Staff with training in benefit/cost analysis	Yes and No	Community Development- 1 Senior Planner (could use a refresher course)
Surveyors	No	No licensed surveyors on City staff.
Staff capable of making substantial damage estimates	Yes	Community Development- 1 Building Official, 1 Senior Planner
Personnel skilled or trained in GIS applications	Yes and No	Community Development- Senior Planners, City can and has requested GIS assistance from Clark County GIS staff.
Scientist familiar with natural hazards in local area	Yes	No scientist or biologist on staff. The City has contracted for this level of expertise in the past.
Emergency manager	Yes	Fire Department- Fire Chief
Grant writers	Yes	City staff writes grants.

Table 3-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	02/18/81
When did the Flood Insurance Rate maps become effective?	09/05/2012
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Community Development/Senior Planner
Is this a primary or auxiliary role?	N/A
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	3-15-2021
Does your floodplain management program meet or exceed minimum requirements?	Meets
If so, in what ways?	N/A

Criteria	Response
When was the most recent Community Assistance Visit or Community Assistance Contact?	5-20-2020
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
If so, please state what they are.	N/A
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
If no, please state why.	N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Not at this time.
If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)?	No
If so, is your jurisdiction seeking to improve its CRS Classification?	
If not, is your jurisdiction interested in joining the CRS program?	No
How many Flood Insurance policies are in force in your jurisdiction? ^a	59
What is the insurance in force? ^a	\$18,212,900
What is the premium in force? ^a	\$42,184
How many total loss claims have been filed in your jurisdiction? ^a	6
How many claims were closed without payment/are still open? ^a	Unknown
What were the total payments for losses? ^a	\$13,710.27

a. According to FEMA records as of 11/30/15.

Table 3-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	2	2001
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 3-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes. IT department.
Do you have hazard mitigation information available on your website?	No
If yes, please briefly describe.	N/A
Do you utilize social media for hazard mitigation education and outreach?	No
If yes, please briefly describe.	N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
If yes, please briefly specify.	N/A
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
If yes, please briefly describe.	city website, water bill news media, social media
Do you have any established warning systems for hazard events?	No
If yes, please briefly describe.	N/A

Table 3-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes – We have a dedicated Public Information Officer.
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No
If yes, please briefly describe.	

Criteria	Response
Do you utilize social media for hazard mitigation education and outreach? If yes, please briefly describe.	Yes City Website, Facebook, CRESA
Do you have any citizen boards or commissions that address issues related to hazard mitigation? If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, please briefly describe.	No
Do you have any established warning systems for hazard events? If yes, please briefly describe.	Yes Everbridge through CRESA

3.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

3.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- The Comprehensive Plan- The Plan addresses Critical Areas including Frequently Flooded Areas and Geologically Hazardous Areas.
- Stormwater Design Manual- geotechnical analysis report is required for stormwater detention facilities located within 200 feet top of a Landslide Hazard area.
- Critical Areas Ordinance (CAO)- the first goal of the Camas CAO is to protect members of the public and public resources and facilities from injury, loss of life, or property damage due to landslides and steep slope failures, erosion, seismic events, or flooding.
- Shoreline Master Program (SMP)- the goal for flood hazards in the SMP is to promote public health, safety, and general welfare, and minimize public and private losses due to flood conditions in specific areas.

3.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Comprehensive Plan- The Hazard Mitigation plan could be adopted by reference
- Stormwater Drainage Plan- some of the identified capital improvements could be included as hazard mitigation initiatives in the Hazard Mitigation action plan.
- Capital Improvement Plan- some of the hazard mitigation initiatives could be incorporated from the Capital Improvement Plan.

3.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 3-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm(s)	4253	2/2/16	Approx. 1 mill.
Severe Storm(s)	1825	3/2/2009	N/A

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm(s)	1682	2/14/2007	N/A
Severe Storm(s)	1671	12/12/2006	N/A
Earthquake	1361	3/1/2001	N/A
Severe Storm(s)	1159	3/1/2001	N/A
Flood	1100	2/9/1996	N/A
Severe Storm(s)	1079	1/3/1996	N/A
Volcano	623	5/21/1980	N/A
Flood	545	12/10/1977	N/A
Flood	185	12/29/1964	N/A
Flood	146	3/2/1963	N/A
Severe Storm(s)	137	10/20/1962	N/A
Flood	70	3/6/1957	N/A
Flood	50	2/25/1956	N/A

3.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- Aging water and sewer lines are vulnerable to the earthquake hazard.
- Aging city hall building. Constructed before seismic codes were in place- susceptible to earthquake damage.
- Public Works Operations Center building- constructed prior to seismic codes in place and thus vulnerable to the earthquake hazard.
- Dam at Lacamas lake- could be impacted to flooding or earthquake.
- Potential chemical spill from the paper mill
- High pressure natural gas line could be vulnerable to the earthquake hazard.
- High tension power lines may be vulnerable severe storms (i.e. wind and ice).
- Homes along the Washougal River may be susceptible to flooding.

3.7 HAZARD RISK RANKING

Table 3-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	48	High
2	Severe Weather	51	High
3	Landslide	18	Medium
4	Flood	18	Medium
5	Wildfire	22	Medium
6	Dam Failure	11	Low
6	Volcano	8	Low
7	Drought	3	Low

3.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 3-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. It should be noted, that the actions identified in the following table were developed in 2016. Due to COVID and staff turnover that has occurred since their identification, the status of some actions may be unknown. Additionally, some actions identified in the 2016 plan may have had implementation agencies other than the City of Camas.

Table 3-9. Previous Planning Initiatives			
Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
CM-1 – Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses. Comment:		X	
CM-2 – Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community. Comment:		X	
CM-3- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan. Comment:		X	
CM-4- Support the County-wide hazard mitigation initiatives identified in Volume I of the hazard mitigation plan. Comment:		X	
CM-5- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan. Comment:		X	
CM-6- Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: Enforcement of the flood damage prevention ordinance Participate in floodplain identification and mapping updates Provide public assistance/information on floodplain requirements and impacts Comment:		X	
CM-7- Work with building officials to identify ways to improve the jurisdiction’s BCEGS classification. Comment:		X	
CM-8- Develop a post-disaster recovery plan and a debris management plan. Comment:		X	
CM-9- Participate in programs such as Firewise, StormReady and the Great Shakeout. Comment:		X	
CM-10- Support voluntary structural retrofitting of older homes on vulnerable soils. Comment:		X	
CM-11- Ensure critical facilities have back-up power generation facilities. Comment:		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
CM-12- Encourage non-structural retrofitting for critical facilities, schools, hospitals and businesses by anchoring, base isolating, relocating vulnerable nonstructural building elements such as hazardous materials containment. Comment:		X	
CM-13- Support the retrofit of at-risk homes to wildland fire. Comment:		X	
CM-14- Work with CRESA to ensure that the public is informed of the necessity of maintaining self-sufficient supplies for 10-14 days. Comment:		X	
CM-15- Ensure that residents understand the benefits of defensible space to minimize and reduce the impacts of fires. Comment:		X	
CM-16- Develop an automated method to notify the public of events during a disaster. Comment:		X	
CM-17- Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy. Comment:		X	
CM-18- Determine critical government functions and establish redundancy for these functions. Comment:		X	
CM-19- Develop integrated County stormwater basin-wide plans Comment:		X	
CM-20- Institute Low Impact Development Practices Comment:		X	
CM-21- Continue and/or enhance where feasible, the city's ongoing drainage system maintenance program to reduce or minimize the impact from stormwater flooding within the City. Comment:		X	
CM-22- Address stormwater flooding problems due to lack of drainage conveyance systems at the following locations: intersection of NW Julia Street and NW 26 th Avenue along NW Maryland Street southern end of NW Iris Court, north of Columbia Summit Drive along NW 10 th Ave at NW Ivy Drive and NW Drake Street Comment:		X	
CM-23- Identify and mitigate drainage issues resulting in nuisance flooding such as replacing undersized culverts where needed. Comment:		X	
CM-24- Monitor/review accumulated effects from piecemeal development on steep slopes. Comment:		X	
CM-25- Identify a funding mechanism for a local match to Federal funds that can fund private mitigation practices. Comment:		X	
CM-26- Develop a drought contingency plan. Comment:		X	
CM-27- Update the City's Emergency Plan notebook. Comment:		X	
CM-28- Partner with the Cascade Volcano Observatory in public education and awareness campaigns. Comment:		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
CM-29- Use zoning and/or special wildfire overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas. Comment:		X	
CM-30- Seek out partnerships for the use of a boat during a flood disaster. Comment:		X	
CM-31- Develop an inventory of public and commercial buildings that may be particularly vulnerable to earthquake damage. Comment:.		X	

3.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 3-10 lists the actions that make up the City of Camas hazard mitigation action plan. Table 3-11 identifies the priority for each action. Table 3-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 3-10. Hazard Mitigation Action Plan Matrix 2023-2028

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
CM-1 – Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.						
Existing	All Hazards	4, 5, 7, 9, 10	Planning	High	HMGP, PDM, FMA, CDBG-DR	Short-term
CM-2 – Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.						
New and Existing	All Hazards	2,4	Planning	Low	Staff Time, General Funds	On-going
CM-3- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.						
Existing	All Hazards	1, 2, 4, 12	Fire/Emergency Management and Building Department	Medium	Staff Time, General Funds	Short-term
CM-4- Support the County-wide hazard mitigation initiatives identified in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-term
CM-5- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1,4	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-term
CM-6- Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: Enforcement of the flood damage prevention ordinance Participate in floodplain identification and mapping updates Provide public assistance/information on floodplain requirements and impacts						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	Flood	1, 4, 5, 9	Community Development and Public Works	Low	Staff Time, General Funds	On-going
New	Earthquake, Flood, Landslide, Severe Weather, Volcano, Wildfire	5, 6, 7, 10, 12	Building and Development Services	Low	Staff Time, General Funds	Short-term
Existing	All Hazards	1, 2, 4, 9	Fire/Emergency Management and Public Works	Medium	EMPG	On-going
New and Existing	Dam Failure, Flood, Severe Weather, Wildfire	1,7	Fire/Emergency Management and Public Works	Low	Staff Time, General Funds	On-going
Existing	Earthquake	1, 2, 7, 9	Building	Low	Property Owner, FEMA Hazard Mitigation Grant Funding	On-going
New	All Hazards	2, 5, 8, 9, 10	Public Works	High	FEMA Hazard Mitigation Grant Programs	Long-term
New and Existing	Earthquake	1, 2, 5, 9, 10	Building	Low	Property owner, Staff Time, General Funds, FEMA funding	On-going
New and Existing	Wildfire	2, 4, 5, 7, 9, 12	Fire and Building	Medium	Property owner, FEMA Hazard Mitigation Grant Programs	On-going
Existing	All Hazards	1, 2, 3, 4	Fire/Emergency Management	Low	Staff Time, General Funds	On-going
New	Wildfire	1, 2, 5, 11	Fire	Low	Staff Time, General Funds	On-going
New	All Hazards	1, 2, 3, 4, 12	Fire/Emergency Management	Medium	FEMA funds	Short-term
New	Earthquake	1, 5, 9, 10, 12	Building and Public Works	Medium	Staff time, General Funds, FEMA Hazard Mitigation Grant Programs	Long-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
CM-18- Determine critical government functions and establish redundancy for these functions. New	Earthquake	4, 6, 8, 10	Public Works, Police, Fire	Medium	Staff Time, General Funds	Long-term
CM-19- Develop integrated County stormwater basin-wide plans New	Flood, Severe Weather	1, 5, 9, 10, 11, 12	Public Works	Medium	FEMA Hazard Mitigation Funding	Long-term
CM-20- Institute Low Impact Development Practices New	Flood, Severe Weather	1, 5, 6, 7, 11, 12	Public Works, Community Development	Low	Staff Time, General Funds	On-going
CM-21- Continue and/or enhance where feasible, the city's ongoing drainage system maintenance program to reduce or minimize the impact from stormwater flooding within the City. New and Existing	Flood and Severe Weather	2, 5, 10, 11, 12	Public Works	Low	Stormwater Utility, CIP	On-going
CM-22- Address stormwater flooding problems due to lack of drainage conveyance systems at the following locations: along NW Maryland Street southern end of NW Iris Court, north of Columbia Summit Drive New and Existing	Flood and Severe Weather	2, 5, 10, 11, 12	Public Works	Medium	CIP, FEMA Hazard Mitigation Grant Programs	Long-term
CM-23- Identify and mitigate drainage issues resulting in nuisance flooding such as replacing undersized culverts where needed. New and Existing	Flood and Severe Weather	1, 2, 5, 11, 12	Public Works	Low	Staff Time, General Funds	On-going
CM-24- Monitor/review accumulated effects from piecemeal development on steep slopes. New	Landslide	11,12	Community Development	Low	Staff Time, General Funds	On-going
CM-25- Identify a funding mechanism for a local match to Federal funds that can fund private mitigation practices. New	All Hazards	1	Community Development	Low	Staff Time, General Funds	Short-term
CM-26- Develop a drought contingency plan. New	Drought	1,2, 3, 4, 5, 6, 11	Public Works	Medium	Staff Time, General Funds, FEMA Hazard Mitigation Grant Programs	Short-term
CM-27- Update the City's Emergency Plan notebook. Existing	All Hazards	1, 3, 12	Fire/Emergency Management	Low	Staff Time, General Funds	On-going
CM-28- Partner with the Cascade Volcano Observatory in public education and awareness campaigns. Existing	Volcano	1, 2, 3, 4	Fire/Emergency Management	Low	Staff Time, General Funds	On-going
CM-29- Use zoning and/or special wildfire overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas. New	Wildfire	1, 2, 4, 5, 7, 11	Fire	Low	Staff Time, General Funds	Short-term
CM-30- Seek out partnerships for the use of a boat during a flood disaster. New	Flood	2, 5	Fire/Emergency Management	Low	Staff Time, General Funds	Short-term
CM-31- Develop an inventory of public and commercial buildings that may be particularly vulnerable to earthquake damage.						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New	Earthquake	1, 5, 9, 10	Building/Public Works	Low	Staff Time, General Funds	Short-term

Table 3-11. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
CM-1	5	High	High	Yes	Yes	No	Medium	High
CM-2	2	Medium	Low	Yes	No	Yes	High	Low
CM-3	4	Low	Medium	No	No	Maybe	Low	Low
CM-4	12	Low	Low	Yes	No	Yes	High	Low
CM-5	2	Low	Low	Yes	No	Yes	High	Low
CM-6	4	Medium	Low	Yes	No	Yes	High	Low
CM-7	5	Medium	Low	Yes	No	Yes	High	Low
CM-8	4	Medium	Medium	Yes	Yes	No	Medium	High
CM-9	2	Medium	Low	Yes	No	Yes	High	Low
CM-10	4	High	Low	Yes	Yes	No	Medium	High
CM-11	5	High	High	Yes	Yes	Yes	Medium	High
CM-12	5	High	Low	Yes	Yes	No	Medium	High
CM-13	6	High	Medium	Yes	Yes	No	Medium	High
CM-14	4	Medium	Low	Yes	No	Yes	Medium	Low
CM-15	4	Medium	Low	Yes	No	Yes	Medium	Low
CM-16	5	Medium	Medium	Yes	No	Yes	Medium	Low
CM-17	5	Medium	Medium	Yes	Maybe	No	Medium	Medium
CM-18	4	High	Medium	Yes	No	Yes	Medium	Low
CM-19	6	High	Medium	Yes	Yes	No	High	High
CM-20	6	Medium	Low	Yes	Maybe	Yes	Medium	Low
CM-21	5	Medium	Low	Yes	No	Yes	Medium	Low
CM-22	5	High	Medium	Yes	No	No	High	High
CM-23	5	Medium	Low	Yes	No	Yes	Medium	Low
CM-24	2	Low	Low	Yes	No	Yes	Low	Low
CM-25	1	Medium	Low	Yes	No	Yes	Medium	Low

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
CM-26	7	Medium	Medium	Yes	Yes	Yes	Medium	Medium
CM-27	3	Medium	Low	Yes	No	Yes	Medium	Low
CM-28	4	Medium	Low	Yes	No	Yes	Medium	Low
CM-29	6	Medium	Low	Yes	No	Yes	Medium	Low
CM-30	2	Medium	Low	Yes	No	Yes	Medium	Low
CM-31	4	Medium	Low	Yes	No	Yes	Medium	Low

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

Table 3-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	CM-2, CM-3, CM-4, CM-5, CM-6, CM-8, CM-25, CM-27	CM-1, CM-6	CM-4, CM-6, CM-14, CM-16		CM-8, CM-11	
Drought	CM-2, CM-3, CM-4, CM-5, CM-8, CM-25, CM-26, CM-27	CM-1, CM-26	CM-4, CM-14, CM-16, CM-26	CM-26	CM-8, CM-11	
Earthquake	CM-2, CM-3, CM-4, CM-5, CM-7, CM-8, CM-17, CM-25, CM-27, CM-31	CM-1, CM-7, CM-10, CM-11, CM-12, CM-17, CM-31	CM-4, CM-14, CM-16		CM-8, CM-11, CM-18	CM-17, CM-31
Flood	CM-2, CM-3, CM-4, CM-5, CM-6, CM-7, CM-8, CM-19, CM-21, CM-23, CM-25, CM-27	CM-1, CM-6, CM-7	CM-4, CM-6, CM-14, CM-16	CM-9, CM-19, CM-20, CM-21	CM-8, CM-11	CM-22
Landslide	CM-2, CM-3, CM-4, CM-5, CM-7, CM-8, CM-24, CM-25, CM-27	CM-1, CM-7	CM-4, CM-14, CM-16		CM-8, CM-11	

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Severe weather	CM-2, CM-3, CM-4, CM-5, CM-7, CM-8, CM-19, CM-21, CM-23, CM-25, CM-27	CM-1, CM-7, CM-9	CM-4, CM-14, CM-16	CM-19, CM-20, CM-21	CM-8, CM-11	CM-22
Volcano	CM-2, CM-3, CM-4, CM-5, CM-7, CM-8, CM-25, CM-27	CM-1, CM-7	CM-4, CM-14, CM-16, CM-28		CM-8, CM-9, CM-11	
Wildfire	CM-2, CM-3, CM-4, CM-5, CM-7, CM-15, CM-25, CM-27	CM-1, CM-7, CM-9, CM-13, CM-15	CM-4, CM-9, CM-14, CM-15, CM-20	CM-15	CM-9, CM-11	

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

4. CITY OF LA CENTER

4.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Greg Thornton, Mayor
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La Center, WA 98629
Telephone: 360-263-5123
e-mail Address: gthornton@ci.lacenter.wa.us

Alternate Point of Contact

Bryan Kast, Public Works Director
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La Center, WA 98629
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4.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—1909
- Current Population—3950 as of July, 2021 (Office of Financial Management Projections)
- Population Growth—The City of La Center’s growth rate suffered during the recession. From 1994 through 2015 the city’s population increased four-fold. Between 2004 and 2014 the Washington Office of Financial Management reported that La Center witnessed annual growth rates as low as 1% and as high as 10%. The average growth rate over the 10 year period was 4.3%. Under the current growth projections, by 2036 La Center will have a total of 7,914.
- Location and Description—The City of La Center is a small, but growing community in southwest Washington located approximately 16 miles north of the Vancouver/Portland metropolitan area and approximately two miles east of Interstate 5. Although La Center is only 20 minutes from the employment centers, attractions, and services of the major metropolitan area, it enjoys the feel of a small-town community. NOPE
- Brief History— On December 7, 1875, John H. Timmen donated land to plat the original site of the town, which would eventually be known as La Center. Early settlers called the area “Timmen’s Landing” in reference to his boat landing along the East Fork of the Lewis River. The direct access to the river promoted our rich history of steamboats, sternwheelers, logging, mills and apples and prune agriculture. Thirty four years later on August 23, 1909, Clark County Commissioners recognized the Town of La Center as a municipality.
- Climate— La Center’s weather is typical of the Pacific Northwest. We have wet but mild springs averaging 63 degrees. Summers are typically low in humidity and average 80 degrees. Fall typically averages 75 degrees. Winters are generally mild with a few days of snow with an average temperature of 48 degrees. Despite the Northwest’s reputation of raining for nine months out of the year, the annual average precipitation is only 45.7 inches.
- Governing Body Format— The City of La Center is a strong Mayor form of government with a five-member City Council. There are three main departments within the City structure; administrative/finance, police and public works. The administrative branch assumes responsibility for the adoption of this plan; the public works department will oversee its implementation.

- **Development Trends**— Like many communities, La Center’s growth was stalled during the recession. Although major growth was stalled due to the economic down turn, the City continued planning for the future. In 2010 the City annexed 583 acres of land leading to the corridor of commerce (Interstate 5) for employment lands. In addition over 350 single family residential lots are in various stages of development. The City is development friendly with standards established to shape the community for generations to come. The Cowlitz casino project is expected to be complete by mid-2017. A new interchange at La Center Road and Interstate 5 along with the addition of new water, sewer and stormwater facilities will increase opportunities for Industrial and Commercial growth in La Center. Various mixes of housing types are being planned within the city to accommodate normal growth as well as the addition of 800 – 1200 new jobs being created at the I-5 junction.

4.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 4-1. An assessment of fiscal capabilities is presented in Table 4-2. An assessment of administrative and technical capabilities is presented in Table 4-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 4-4. Classifications under various community mitigation programs are presented in Table 4-5. An assessment of education and outreach capabilities is presented in Table 4-6.

Table 4-1. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: Title 15: La Center Building Code and Specialty Code; last amended by Ord. 2022-01	Yes	No	Yes
Zoning Code Comment: Title 18: Development Code: Division 2. Zoning; Last amended by Ord. 2017-09	Yes	No	Yes
Subdivisions Comment: Title 18: Division 3; Section 18.210: Subdivision Provisions; Last by Ord. 2010-09	Yes	No	Yes
Stormwater Management Comment: Title 18: Division 4; Chapter 18.320: Stormwater and Erosion Control; Last amended by Ord. 2010-05	Yes	No	Yes
Post-Disaster Recovery Comment: N/A	No	No	No
Real Estate Disclosure Comment: N/A	No	No	No
Growth Management Comment: Title 18: Division 2: Chapter 18.120 Plan Amendments and Zone Changes; Last by Ord 2007-09	Yes	Yes	Yes
Site Plan Review Comment: Title 18: Division 3; Section 18.215: Site Plan Review; Last amended by Ord. 2010-05	Yes	No	Yes
Environmental Protection Comment: Title 18: Division 4; Chapter 18.310: Environmental Policy; Last amended by Ord. 2006-17	Yes	No	Yes
Flood Damage Prevention Comment: Frequently Flooded Areas addressed in Title 18: Division 4: Chapter 18.300: Critical Areas; Last amended by Ord. 2021-08	Yes	No	Yes
Emergency Management Comment: La Center is covered by the Emergency Operations Plan for Clark County prepared by CRESA in 2013.	Yes	Yes	Yes
Climate Change Comment: N/A	No	No	No
Other Comment: N/A	No	No	No
General or Comprehensive Plan Is the plan equipped to provide linkage to this mitigation plan? No	Yes	Yes	Yes

	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: La Center Comprehensive Plan 2016-2035; Adopted 13 October, 2021; Ordinance #2021-12			
Capital Improvement Plan What types of capital facilities does the plan address? Transportation How often is the plan updated? Updated every 5 -7 years Comment: Update to be approved 2016			Yes
Floodplain or Watershed Plan Comment: N/A	No	No	No
Stormwater Plan Comment: No Capital Improvement Plan for Stormwater			Yes
Habitat Conservation Plan Comment: N/A	No	No	Yes
Economic Development Plan Comment: element of the Comprehensive Plan	Yes	No	Yes – dependent on funding
Shoreline Management Plan Comment: element of the Comprehensive Plan	Yes	No	Yes
Community Wildfire Protection Plan Comment: N/A	No	No	No
Forest Management Plan Comment: N/A	No	No	No
Climate Action Plan Comment: N/A	No	No	No
Other Comment: N/A	No	No	No
Comprehensive Emergency Management Plan Comment: Regional Comprehensive Emergency Management Plan; 2013; CRESA	Yes	Yes	Yes
Threat & Hazard Identification & Risk Assessment Comment: N/A	No	No	No
Post-Disaster Recovery Plan Comment: N/A	No	No	No
Continuity of Operations Plan Comment: N/A	No	No	No
Public Health Plan Comment: N/A	No	No	No

Table 4-2. Fiscal Capability

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

Table 4-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Public Works, City Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works, Building Official
Planners or engineers with an understanding of natural hazards	Yes	Public Works, Planner Consultant
Staff with training in benefit/cost analysis	Yes	Public Works, Director
Surveyors	Yes	Professional Consultant(s)
Staff capable of making substantial damage estimates	Yes	Public Works, City Engineer
Personnel skilled or trained in GIS applications	Yes	Public Works, City Engineer, City Planner, Tech.
Scientist familiar with natural hazards in local area	Yes	Professional Consultant(s)
Emergency manager	Yes	CRESA/City Supported
Grant writers	Yes	Public Works, Planning, City Engineer, Planner Tech., Professional Consultant(s)

Table 4-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	N/A
When did the Flood Insurance Rate maps become effective?	09/05/2012
What local department is responsible for floodplain management?	Public Works Planning
Who is your floodplain administrator? (department/position)	Public Works, City Building Official
Is this a primary or auxiliary role?	Auxiliary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	2012
Does your floodplain management program meet or exceed minimum requirements?	La Center Floodplain Management Program is not currently recognized by FEMA
If so, in what ways?	
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	Yes
If so, please state what they are.	La Center is currently suspended from the NFIP
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Unknown
If no, please state why.	Insert appropriate information
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)?	No
If so, is your jurisdiction seeking to improve its CRS Classification?	N/A
If not, is your jurisdiction interested in joining the CRS program?	No
How many Flood Insurance policies are in force in your jurisdiction? ^a	0
What is the insurance in force? ^a	\$0
What is the premium in force? ^a	\$0
How many total loss claims have been filed in your jurisdiction? ^a	Unknown
How many claims were closed without payment/are still open? ^a	Unknown
What were the total payments for losses? ^a	Unknown

a. According to FEMA records as of 11/30/2015

Table 4-5. Community Classifications

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

Table 4-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	No
Do you have personnel skilled or trained in website development?	Yes, Public Works Adm.
Do you have hazard mitigation information available on your website? If yes, please briefly describe.	Yes 2016 Update/Survey
Do you utilize social media for hazard mitigation education and outreach? If yes, please briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, please briefly describe.	Yes Quarterly Newsletters
Do you have any established warning systems for hazard events? If yes, please briefly describe.	No

4.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

4.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- None at this time.

4.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Comprehensive Plan – Implement city wide policies related to zoning, geologic hazards and slopes.
- Shorelines Program - — Implement restrictions or mitigation on construction, re-construction or building activity within hazard areas or flood plains.
- Critical Areas - Implement possible mitigation for construction, re-construction or building activity within critical areas and buffers.
- Standards for Construction - Implement mitigation for construction impacts, restrict or implement conditions for storm, water, sanitary sewer and road construction.

4.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 4-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm, Straight Line Winds, Flooding, Landslides, Mudslides and a Tornado	4253	12/1/2015	Unknown
Severe Winter Storm And Record And Near Record Snow	1825	12/12/2008	Unknown
Severe Winter Storm, Landslides, And Mudslides	1682	12/14/2006	Unknown
Severe Storms, Flooding, Landslides, And Mudslides	1671	11/2/2006	Unknown
Earthquake	1361	2/28/2001	Unknown
Severe Winter Storms, Land & Mudslides, Flooding	1159	12/26/1996	Unknown
High Winds, Severe Storms And Flooding	1100	1/26/1996	Unknown
Severe Storms, High Wind, And Flooding	1079	11/7/1995	Unknown
Volcanic Eruption, Mt. St. Helens	623	5/21/1980	Unknown
Severe Storms, Mudslides, & Flooding	545	12/10/1977	Unknown
Heavy Rains & Flooding	185	12/29/1964	Unknown
Severe Storms	137	10/20/1962	Unknown

4.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- Isolation, only one bridge leading in and out of the community
- Vulnerable creek crossing (Brezee Creek) between emergency services, public works operations and schools

4.7 HAZARD RISK RANKING

Table 4-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe weather	33	High
2	Earthquake	32	High
3	Flood	18	Medium
3	Landslide	18	Medium
4	Dam failure	8	Low
5	Drought	1	Low
5	Volcano	1	Low
5	Wildfire	1	Low

4.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 4-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. It should be noted, that the actions identified in the following table were developed in 2016. Due to the significant amount of time and staff turnover that has occurred since their identification, the status of some actions may be unknown. Additionally, the implementation of many action items was assigned to agencies aside from the City of La Center.

Table 4-9 Status of Previous Planning Initiatives			
Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses. Comment: Focus within City jurisdiction, carry over as action item LC-1		X	
Join the CRS program Comment: Become compliant with NFIP			x
Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions with the community. Comment: Continue annual inspections and retro as feasible, carry over as action item LC-2		X	
Ensure that the public is informed of the necessity of maintaining a 3 day supply of food and water Comment: On-Going preparedness messaging, carry over as action items LC-3		X	
Develop public information packets ready to deploy following a disaster event Comment: Carry over as action item LC-4		X	
Ensure severe weather warning system and public education for tornadoes in place. Comment: Carry over as action item LC-5		X	
Expand the public awareness program about hazard materials Comment: Carry over as action item LC-6		X	
Cultivate an awareness program for landslide hazards Comment: Carry over as action item LC-7		X	
Develop an automated method to notify the public of events during a disaster. Comment: County Wide Notification System in Place	x		
Expand weather radio systems to include all of Clark County Comment: La Center area covered	x		
Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy Comment: Carry over as action item LC-8		x	
Determine critical government functions and establish redundancy for these functions. Comment: Carry over as action item LC-9		x	
Target development and preparedness efforts of Tier II hazardous material facilities Comment: No tier II sites known within City boundaries			x
Provide opportunities for strategic relations between emergency managers and social service providers. Comment: More of a County wide action item			x
Develop a contingency/Business resumption organization Comment: Carry over as action item LC-11		x	
Require the construction of earthquake-resilient structures	x		

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Comment: Comply with current building codes			
Develop integrated County stormwater basin-wide plans			x
Comment: County directive			
Promote development off of the floodplain		x	
Comment: Currently one structure within City boundaries in flood plain, LC-13			
Consider adoption of a zero-rise floodway		x	
Comment: Comply with NFIP LC-14			
Expand the County Clean Water Program			x
Comment: County Directive			
Seek compliance with the National Flood Insurance Program (NFIP) to maintain good standing and compliance under the NFIP. This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP.		x	
Enforcement			
Participate in floodplain identification and mapping updates			
Provide public assistance/information on the floodplain requirements and impacts.			
Comment: Carry over as action item LC-10			
Support the use of LIDAR mapping technology to refine landslide hazard maps			x
Comment: Tied in with assessment of landslide areas as described above			
Ensure state certification of licensing for professionals performing geotechnical evaluations to a higher standard.	x		
Comment: Only licensed geo-engineers used			
Institute Low Impact Development Practices		x	
Comment: Updated with comprehensive plans LC-16			
Initiate a vegetation management program		x	
Comment: Continue to refine and develop LC-17			
Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.		x	
Comment: Carry over as an action item LC-19			
Develop priority routes throughout the county and improve these routes		x	
Comment: Carry over as action item LC-19			
Ensure that electricity is available to populations requiring priority for electricity.			x
Comment: Clark County Public Utility role			
Ensure appropriate equipment is available during events.		x	
Comment: Carry over as action item LC-19			

4.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 4-10 lists the actions that make up the City of La Center hazard mitigation action plan. Table 4-11 identifies the priority for each action. Table 4-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 4-10. Hazard Mitigation Action Plan Matrix 2023-2028

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
LC-1—Seek to establish and maintain, where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.								
Existing	All Hazards		1,2,4,5,8,9,10,12	Planning	High	City, Owners, HMGP, PDM, FMA	Ongoing	
LC-2—Seek to integrate and maintain the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions with the community.								
Existing	EQ, LS, Hazmat		1,2,4,5,8,9,10,12	City	Low	City, Owners, HMGP, PDM, FMA	Ongoing	
LC-3—Ensure that the public is informed of the necessity of maintaining a 3 day supply of food and water								
Existing	All Hazards		1,2	CRESA/City Supported	Low	General Fund/Staff Time	Ongoing	
LC-4—Develop public information packets ready to deploy following a disaster								
Existing	All Hazards		1,2	CRESA/City Supported	Low	General Fund/Staff Time	Ongoing	
LC-5—Ensure severe weather warning system and public education for tornadoes in place.								
Existing	SW		1,2,3	CRESA/City Supported	Low	General Fund/Staff Time	Ongoing	
LC-6—Expand the public awareness program about hazard materials								
Existing	Hazmat		1,2,	CRESA/City Supported	Low	General Fund/Staff Time	Ongoing	
LC-7—Cultivate an awareness program for landslide hazards								
Existing	LS		1,2,	CRESA/City Supported	Low	General Fund/Staff Time	Ongoing	
LC-8—Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy								
Existing	EQ		4,5,8,9,10	City Building Dept.	Medium	General Fund/Staff Time	Ongoing	
LC-9—Determine critical government functions and establish redundancy for these functions.								
Existing	All Hazards		8,10	CRESA/City Supported	Medium	General Fund/Staff Time	Short-term 1-3 Years	
LC-10—Seek compliance with the National Flood Insurance Program (NFIP) to maintain good standing and compliance under the NFIP. This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP.								
Enforcement								
Participate in floodplain identification and mapping updates								
Provide public assistance/information on the floodplain requirements and impacts.								
New	Flood		5,6,7,11,12	Planning Dept.	Low	General Fund/Staff Time	Short-term 0-1 Year	
LC-11—Develop a contingency/Business resumption organization								
New	All Hazard		10	CRESA/City Supported/Chamber of Commerce	Medium	General Fund/Staff Time	Short-term 0-5 Years	
LC-12—Require the construction of earthquake-resilient structures								
Existing	EQ		10	City Building Department	Low	General Fund/Staff Time	Short-term 0-1 Year	
LC-13—Promote development off of the floodplain								

Existing	Flood	10,11,12	City Building Department	Medium	General Fund/Staff Time	Short-term 0-5 Years
LC-14—Consider adoption of a zero-rise floodway						
Existing	Flood	10,11,12	City Building Department	Low	General Fund/Staff Time	Short-term 0-1 Year
LC-15—Develop a method of assessing and documenting landslide hazard areas.						
Existing	LS	1,2,4,5,6,7,8,10,12	City Building Department	Medium	General Fund, Grant, Staff Time	Short-term 0-5 Years
LC-16—Support the use of LIDAR mapping technology to refine landslide hazard maps						
Existing	LS	1,2,4,5,6,7,8,10,12	City Building Department	Medium	General Fund, Grant, Staff Time	Short-term
LC-17—Institute Low Impact Development Practices						
Existing	EQ, Flood, LS,	2,4,5,6,7,10,11,12	City Building Department	Low	General Fund, Staff Time	Short-term 0-1 Year
LC-18—Initiate a vegetation management program						
Existing	WF	1,11,12	City Public Works Department	Low	General Fund, Staff Time	Short-term 0-1 Year
LC-19—Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.						
Existing	All Hazards	1,2,3,4,5,6,8,9,10,12	CRESA, City Public Works Department	High	FEMA Grants, General Fund, Bonds, Staff Time	Short-term 0-5 Years

Table 4-11. Mitigation Strategy Priority Schedule

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

LC-18	3	Medium	Low	Yes	No	Yes	Medium	Low
LC-19	10	High	High	Yes	Yes	No	Low	High

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

Table 4-12. Analysis of Mitigation Actions

Action Addressing Hazard, by Mitigation Type ^a						
Hazard Type	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	LC-1, LC-9, LC-11	LC-6	LC-3, LC-4, LC-11		LC-9, LC-19	
Drought	LC-1, LC-9, LC-11	LC-6	LC-3, LC-4, LC-11		LC-9, LC-19	
Earthquake	LC-1, LC-2, LC-9, LC-11, LC-12, LC-17	LC-6	LC-3, LC-4, LC-8, LC-11		LC-9, LC-19	
Flood	LC-9, LC-10, LC-11, LC-12, LC-13, LC-14, LC-17	LC-10	LC-3, LC-4, LC-10		LC-9, LC-19	LC-19
Landslide	LC-9, LC-11, LC-15		LC-4, LC-11		LC-19	LC-19
Severe Weather	LC-1, LC-9, LC-11	LC-6	LC-3, LC-4, LC-11		LC-9	
Volcano	LC-1, LC-9, LC-11		LC-3, LC-4, LC-11		LC-9	
Wildfire	LC-18, LC-9, LC-11		LC-3, LC-4, LC-11		LC-9,	

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

5. CITY OF RIDGEFIELD

5.1 NATURAL HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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5.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**— Founded in 1865 and Incorporated in 1909.
- **Current Population**— According to the US Census Bureau, the population for 2022 was 13,640.
- **Population Growth**— Based on data gathered from the US Census Bureau, Ridgefield continues to experienced steady growth. With a population of 6,123 in 2014, the City has more than doubled in size. In recent years, Ridgefield continues to be one of the fastest growing communities in Washington, and is anticipated to grow from its current 13,640 to 25,494 people by 2035.
- **Location and Description**— Ridgefield is located 10 miles north of Vancouver, Washington and 20 miles north of Portland, Oregon on the I-5 Discovery Corridor with easy access to metropolitan amenities yet enough distance to maintain a small-town atmosphere. According to the United States Census Bureau, the city has a total area of approximately 7.18 square miles (18.60 km²), of which, 7.08 square miles is land and 0.10 square miles is water. The City is bordered by Clark County.

The city is a pastoral, rolling-hills countryside and slopes up a gentle incline from the riverbank of Lake River to elevated highlands on the east. The Ridgefield National Wildlife Refuge Complex lies between the downtown area and the Columbia River three miles to the west. The area is marked with numerous fields bordered by canyons, with ridges along them overlooking the canyons in places. The canyons have been and continue to be carved from the land primarily by water erosion.

State Route 501, also known as Pioneer Street, acts as the primary transportation corridor connecting downtown and the I-5 Junction. Land uses along this corridor reflect the spectrum of development types with a combination of industrial, residential and commercial development. Main Avenue and Hillhurst Road are north-south connectors that are near or traverse downtown. These areas reflect over 100 years of settlement, with a mix of old historic residential structures interspersed with modern subdivisions and a diverse array of historic buildings in the downtown area.

- **Brief History**— Ridgefield's origins can be traced back more than 1,000 years to early Native American settlements that prospered in the area near Lake River now designated as the Ridgefield National Wildlife Refuge. The Lewis and Clark Expedition visited the area twice and the City of Ridgefield grew up on the

banks of the River. This navigable water starts in Vancouver Lake and flows north into the Columbia River. After the Civil War, the area grew rapidly through the second half of the nineteenth century.

The railroad arrived in 1903 and in 1916, the steamship City of Ridgefield was launched. Served by both river and rail, Ridgefield was seen as a ‘transfer center to inland towns.’ In 1920, Ridgefield was known for its immensely fertile agricultural lands producing potatoes, prunes, and livestock. The area also enjoyed a rich manufacturing base, including a large lumber mill, a shingle mill, a creamery, a cheese factory and a boat building business. The Pacific Wood Treating Company opened in 1963, providing the city with several hundred jobs until it filed for bankruptcy and closed its doors in 1993.

The completion of Interstate 5 in the 1960s made Ridgefield more accessible which led to growth in the industrial and shipping sectors. The creation of the Ridgefield National Wildlife Refuge in 1965 drew an increasing numbers of tourists. Beginning in 2000, the population of Ridgefield exploded and a growing number of companies have chosen the location for a variety of reasons, including land availability, proximity to Portland, ocean/air/rail freight facilities, good schools, and livable communities.

- **Climate**— Ridgefield enjoys a mild climate, thanks to its proximity to the Pacific Ocean to the west and the Cascade mountains to the east. The warmest month of the year is August with an average maximum temperature of 82 degrees. The coldest month of the year is January with an average minimum temperature of 34 degrees. Temperature variations between night and day tend to be moderate during summer with a difference of about 27 degrees Fahrenheit, and fairly limited during winter with an average difference of 15 degrees Fahrenheit.

The annual average precipitation in Ridgefield is 45.70 inches. Winter months tend to be wetter than summer months. The wettest month of the year is December with an average rainfall of 7.08 inches. On average, there are 145 sunny days per year in Ridgefield.

- **Governing Body Format**— Ridgefield’s original incorporation called for a strong-mayor form of government with a volunteer mayor. In 1999 the voters approved a ballot measure that changed city government to the council-manager form, in which the elected council hires a city manager and appoints a volunteer mayor from its own ranks. Ridgefield is classified as a “non-charter code city” under state law. The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.
- **Development Trends**—While housing in Ridgefield has developed less densely than some other Clark County cities to date, future growth is anticipated to alter that pattern. To accommodate this growth and shape a quality future, Ridgefield is developing a strong, shared vision. The City is focusing planning efforts on community priorities, including detailed plans for downtown design, multi-modal transportation, downtown and waterfront integration (in 2015 the Washington legislature approved funding for a railroad overpass that will connect the downtown and waterfront areas), and development of an outdoor recreation complex. Additional planning efforts target environmental resource protection.

The cornerstone of the city’s long-range planning efforts is the Comprehensive Plan. The plan details policies for land use, housing, economic development, capital facilities, environmental resources, and more, supported by capital facilities plans for public utilities including water, sanitary sewer, transportation, and parks. The City of Ridgefield is in the process of updating its Comprehensive Plan, with anticipated completion in December 2025, to plan for the next 20 years of development. The community vision identified in the current plan emphasizes:

- A regional employment center for Clark County and Southwest Washington rather than a bedroom community, with opportunities for family-wage jobs.

- Quality neighborhoods, including maintaining existing neighborhoods, and creating new neighborhoods that incorporate pedestrian elements, access to schools and parks, and high quality design.
- Protection of critical environment resource areas to ensure the city’s natural amenities remain central to the community identity, aesthetics, and environmental well-being.
- Careful management of growth to ensure orderly, cost effective provision of public facilities and utilities as the city continues to grow.

5.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 5-1. An assessment of fiscal capabilities is presented in Table 5-2. An assessment of administrative and technical capabilities is presented in Table 5-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 5-4. Classifications under various community mitigation programs are presented in Table 5-5. An assessment of education and outreach capabilities is presented in Table 5-6.

In addition to the capabilities listed below, the City of Ridgefield is a member of the Discovery Clean Water Alliance, which was legally formed on January 4, 2013 under the Joint Municipal Utility Services Act (RCW 39.106). The Alliance serves four Member agencies – the City of Battle Ground, Clark County, Clark Regional Wastewater District and the City of Ridgefield. The Alliance Members jointly own and jointly manage regional wastewater assets under Alliance ownership. The Alliance seeks to optimize the long-term framework for delivery of regional wastewater transmission and treatment services to the urban growth areas in the central portion of Clark County, Washington.

Table 5-1. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: Ridgefield Municipal Code (RMC), Title 14, Buildings and Construction (Construction Administrative Code) Adopted pursuant to RCW 19.27.031 and State Building Code Council of the State of Washington 14.030.010 states “All building and building-related codes as currently adopted or as may be adopted in future enactments by the state of Washington pursuant to RCW 19.27.031, together with all amendments that may be adopted by the State Building Code Council of the state of Washington are hereby adopted as the building codes for the city of Ridgefield.” The provisions of the code apply to the administration of the technical and nontechnical codes – International Building Code, International Residential Code, International Existing Building Code, International Fuel Gas Code, International Mechanical Code, Uniform Plumbing Code, International Property Maintenance Code, Uniform Housing Code, International Fire Code, International Energy Conservation Code, ADA Standards for Accessible Design, National Green Building Standard.	Yes	Yes	Yes
Zoning Code Comment: RMC 18.200 – Establishment of Zoning Districts and Maps	Yes	No	Yes
Subdivisions Comment: RMC 18.620 – Procedure for Subdivisions	Yes	No	Yes
Stormwater Management Comment: RMC 13.75 – Stormwater Utility	Yes	No	Yes
Post-Disaster Recovery Comment: N/A	No	No	No
Real Estate Disclosure Comment: N/A	No	No	No
Growth Management Comment: RMC Title 18 – Ridgefield Development Code (1995) adopted pursuant to RCW 36.70A.120	Yes	Yes	Yes
Site Plan Review Comment: RMC 18.500- Site Plan Review	Yes	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated
Environmental Protection Comment: RMC 18.810 – Environmental Standards pursuant to SEPA, RCW 43.21C.120, WAC 197-904, 197-11	Yes	Yes	Yes
Flood Damage Prevention Comment: RMC 18.750- Flood Control, 2007	Yes	No	Yes
Emergency Management Comment: RMC 2.44- Emergency Management, 2005, pursuant to RCW 38.52; Article 11, Section 11 of the Washington State Constitution	Yes	Yes	Yes
Climate Change Comment: N/A	No	No	No
Other Comment:	No	No	No
General or Comprehensive Plan Is the plan equipped to provide linkage to this mitigation plan? Yes Comment: Ridgefield Urban Area Comprehensive Plan (2016-2035); approved 2/25/2016	Yes	No	Yes
Capital Improvement Plan What types of capital facilities does the plan address? General Facilities, Water, Sewer, Stormwater, Parks, Transportation, Schools How often is the plan updated? Annually Comment: Capital Facilities Plan, incorporated by reference into the Comprehensive Plan	Yes	No	Yes
Floodplain or Watershed Plan Comment: N/A	No	No	No
Stormwater Plan Comment: Capital Facilities Plan, incorporated by reference into the Comprehensive Plan	Yes	No	Yes
Habitat Conservation Plan Comment:	No	No	No
Economic Development Plan Comment: An element of the comprehensive plan	Yes	No	Yes (dependent on funding)
Shoreline Management Plan Comment: Shoreline Management Program, 12/31/2021	Yes	No	Yes
Community Wildfire Protection Plan Comment: N/A	No	No	No
Forest Management Plan Comment: N/A	No	No	No
Climate Action Plan Comment: N/A	No	No	No
Other Comment: N/A	No	No	No
Comprehensive Emergency Management Plan Comment: Emergency Management Plan (update in progress); CRESA	Yes	Yes	Yes
Threat & Hazard Identification & Risk Assessment Comment: Completion in 2022	In Progress	No	No
Post-Disaster Recovery Plan Comment: N/A	No	No	No
Continuity of Operations Plan Comment: N/A	No	No	No
Public Health Plan Comment: N/A	No	No	No

Table 5-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding – Revenue bonds are used to finance construction or improvements in facilities of enterprise systems operated by the City in accordance with the Capital Improvement Program and are generally payable from the enterprise. Revenue bonds are not subject to the City’s statutory debt limitation and voter approval is not required.	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service – Ridgefield only provides water service, and has the authority to establish user fees and development charges for water connections	Yes
Incur Debt through General Obligation Bonds – Assessment bonds are considered in place of general obligation bonds where possible to assure the greatest degree of public equity. Limited Tax General Obligation Bonds can be issued with the approval of the City Council under specific circumstances. Unlimited General Obligation Bonds are payable from excess tax levies and subject to voter approval by 60% of the voters.	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs - Department of Ecology, Department of Commerce	Yes
Development Impact Fees for Homebuyers or Developers - RMC 18.070 - The city has authorized the use of impact fees for allowable public purposes by adoption of the RUACP and CFP. The CFP identifies each of the city’s major capital facilities and services; establishes levels of service (LOS) standards for each capital facility; and identifies specific capital facilities construction or enhancement projects for which impact fees may be used.	Yes
Other – Public Works Trust Fund Loans, the Local Option Capital Asset Lending Program	No

Table 5-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Public Works, Community Development
Engineers or professionals trained in building or infrastructure construction practices	Yes for Infrastructure	Building Official Public Works
Planners or engineers with an understanding of natural hazards	Yes	Community Development Public Works
Staff with training in benefit/cost analysis	Yes	Community Development Public Works
Surveyors	No	
Staff capable of making substantial damage estimates	Yes	Building Official
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Police Chief; CRESA
Grant writers	No	

Table 5-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	05/19/81
When did the Flood Insurance Rate maps become effective?	09/15/2012
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Community Development Director
• Is this a primary or auxiliary role?	Auxiliary

Criteria	Response
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	2007
<ul style="list-style-type: none"> Does your floodplain management program meet or exceed minimum requirements? If so, in what ways? 	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
<ul style="list-style-type: none"> If so, please state what they are. 	
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
<ul style="list-style-type: none"> If no, please state why. 	
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Update regulations
Does your jurisdiction participate in the Community Rating System (CRS)?	No
<ul style="list-style-type: none"> If so, is your jurisdiction seeking to improve its CRS Classification? If not, is your jurisdiction interested in joining the CRS program? 	No
<ul style="list-style-type: none"> How many Flood Insurance policies are in force in your jurisdiction? ^a What is the insurance in force? ^a What is the premium in force? ^a How many total loss claims have been filed in your jurisdiction? ^a How many claims were closed without payment/are still open? ^a What were the total payments for losses? ^a 	1 \$350,000 \$412 0 0 \$0

a. According to FEMA records as of 11/30/2015

Table 5-5. Community Classifications

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

Table 5-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No, direct questions to CRESA
<ul style="list-style-type: none"> If yes, please briefly describe. 	
Do you utilize social media for hazard mitigation education and outreach?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Facebook, Twitter— articles & notices
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Planning Commission
<ul style="list-style-type: none"> If yes, please briefly specify. 	
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Website, Next Door
Do you have any established warning systems for hazard events?	Yes, CRESA Public Alerts

Criteria	Response
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- If yes, please briefly describe.

5.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the natural hazard mitigation plan into local planning mechanisms.

5.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan:

- Mitigation assessments are included in the Ridgefield Development Code, the Construction Administrative Code, land use plans and site plan review. Goals and risk assessments are also included in the process for review/adoption of the Urban Area Comprehensive Plan and the Capital Improvement Plan.

5.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan, but provide an opportunity for future integration:

- Integrate plan goals with community objectives
- Create a stand-alone resiliency plan as an appendix to the Comprehensive Plan. Incorporate the Shoreline Management Program into the Comprehensive Plan

5.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 5-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Rain, Landslide	N/A	2016	Unknown
Severe Rain, Landslide	N/A	2012	Unknown
Earthquake	1361	2001	Unknown
Severe Winter Storm	1159	1997	Unknown
Severe Storm, Flooding	N/A	11/1995	10 houseboats damaged
Volcanic Eruption	623	5/21/1980	Unknown
Tornado	N/A	8/26/1953	Unknown

5.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- An urban drainage issue downtown that results in localized flooding every time it rains – This issue is being addressed through the recently adopted Stormwater Management Comprehensive Plan.
- All neighborhoods and the downtown area have the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake, on Pioneer Street.
- Substantial number of buildings in downtown area are unreinforced masonry.
- Port of Ridgefield, 348+ residential, 3 commercial, and 2 industrial structures on D, E or F soils.
- The Port of Ridgefield, 97+ residential and 5 commercial lots developed in the floodplain.
- 224+ landslide susceptible parcels, including Union Ridge Elementary School and Ridgefield High School.
- Existing buildings, the floodplain and the location of the downtown area cannot be modified. However, the City can create an education and awareness program for residents who live in these areas regarding the vulnerabilities, possibility of insurance coverage, retrofitting, etc.

5.7 HAZARD RISK RANKING

Table 5-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	39	High
1	Severe Weather	39	High
2	Flood	21	Medium
3	Landslide	18	Medium
4	Wildfire	8	Low
5	Dam Failure	7	Low
6	Drought	2	Low
6	Volcano	2	Low

5.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 5-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. It should be noted, that the actions identified in the following table were developed in 2016. Due to COVID and staff turnover that has occurred since their identification, the status of some actions may be unknown. Additionally, some actions identified in the 2016 plan may have had implementation agencies other than the City of Ridgefield .

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
RF-1 –Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses; encourage non-structural retrofitting of hazardous materials containment. <i>Comment;</i> <i>Ongoing</i>		X	
RF-2 – Integrate the natural hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community. <i>Comment Will be part of 2025 plan</i>		X	
RF-3 – Develop and implement a program to capture perishable data after significant events (e.g., high water marks, preliminary damage estimates,			X

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
damage photos) to support future mitigation efforts including the implementation and maintenance of the natural hazard mitigation plan. <i>Comment: Staffing changes have made this a project that will not be completed during this plan period</i>			
RF-4 – Support the County-wide initiatives identified in Volume 1 of the natural hazard mitigation plan. <i>Comment Ongoing efforts</i>		X	
RF-5 – Actively participate in the plan maintenance protocols outlined in Volume 1 of the natural hazard mitigation plan. <i>Comment. Ongoing</i>		X	
RF-6 – Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: <i>Comment Ongoing</i>		X	
RF-7 – Work with building officials to identify ways to participate in the BCEGS classification program <i>Comment: Staffing changes have made this a project that will not be completed during this plan period</i>			X
RF-8 –Support mitigation measures that enhance other phases of emergency management such as the development of a post-disaster recovery plan and a debris management plan; the development of public information packets to deploy following a disaster event; ensure emergency vehicle access to all residents to allow effective response and recovery; develop a contingency/business resumption organization <i>Comment: Participated in county debris plan and in fuels management plan, other efforts are on going</i>		X	
RF-9 – Participate or encourage participation in programs such as Firewise, StormReady. <i>Comment Efforts are ongoing buy have been hampered due to staffing changes</i>		X	
RF-10 – Conduct a citywide resiliency study – critical and hazardous infrastructure <i>Comment Efforts are ongoing buy have been hampered due to staffing changes</i>		X	
RF-11 – Continue to pursue best available data and use this data to inform policies and regulations. This would include projects such as mapping and assessing vulnerability to erosion; stabilize erosion hazard areas, manage development in erosion hazard areas; Promoting development off of the floodplain, consider adoption of a zero-rise floodway, Support the use of LIDAR mapping technology to refine landslide hazard maps <i>Comment</i>		X	
RF-12 – Conduct pre-earthquake and flood assessments for critical and essential facilities and develop a risk reduction strategy, e.g., relocate and/or retrofit facilities. <i>Comment; Staffing and funding changes have caused this to be reprioritized .</i>		X	
RF-13 – Determine critical government functions and establish redundancy for those functions <i>Comment Completed as part of COOP and EOC planning with CRESA in 2022</i>	X		
RF-14 – Target development and preparedness efforts of Tier II hazardous material facilities. <i>Comment: Completed in partnership with CCFR and CRESA</i>	X		
RF-15– Initiate a vegetation management program. <i>Comment: Phased in noxious and invasive plant abatement program during this plan period</i>	X		

5.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 5-10 lists the actions that make up the City of Ridgefield hazard mitigation action plan. Table 5-11 identifies the priority for each action. Table 5-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

5.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

- Climate Change – Water levels at the waterfront/Port property
- Citywide Resiliency Study – critical and hazardous infrastructure

Table 5-10. Hazard Mitigation Action Plan Matrix 2023-2028

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	
RF-1 – Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses; encourage non-structural retrofitting of hazardous materials containment.	Existing	All Hazards	4, 5, 7, 9, 10	Planning	High	HMGP, PDS, FMA, CDBG-DR	Short-term
RF-2 – Integrate the natural hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.	New and Existing	All Hazards	2, 4	Planning	Low	Staff time, General Fund	On-going
RF-3 – Support the County-wide initiatives identified in Volume 1 of the natural hazard mitigation plan.	New and existing	All Hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Community Development Dept.	Low	Staff Time, General Funds	Long Term
RF-4 – Actively participate in the plan maintenance protocols outlined in Volume 1 of the natural hazard mitigation plan.	New and Existing	All Hazards	1, 4	Community Development Dept.	Low	Staff Time, General Funds	On-going
RF-5 – Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP:							
<ul style="list-style-type: none"> • Enforcement of the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. • Improve stormwater management; improve stormwater drainage system capacity. 	New and Existing	Flood	1, 4, 5, 9	Public Works	Low	Staff Time, General Funds	On-going
RF-6 – Support mitigation measures that enhance other phases of emergency management such as the development of a post-disaster recovery plan and a debris management plan; the development of public information packets to deploy following a disaster event; ensure emergency vehicle access to all residents to allow effective response and recovery; develop a contingency/business resumption organization.	Existing	All Hazards	1, 2, 4, 9	Emergency Management	Medium	EMPG	On-going
RF-7 – Participate or encourage participation in programs such as Firewise, StormReady.	New and Existing	Dam Failure, Flood, Severe Weather, Wildfire	1, 7	Emergency Management and Public Works	Low	Staff Time, General Funds	On-going
RF-8 – Conduct a citywide resiliency study – critical and hazardous infrastructure.	New and Existing	Earthquake, Severe Weather	1, 4, 5, 9	Public Works	Medium	Staff Time, Grants may be available	On-going

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
RF-9 – Continue to pursue best available data and use this data to inform policies and regulations. This would include projects such as mapping and assessing vulnerability to erosion; stabilize erosion hazard areas, manage development in erosion hazard areas; Promoting development off of the floodplain, consider adoption of a zero-rise floodway, Support the use of LIDAR mapping technology to refine landslide hazard maps.						
New and Existing	Flood, Landslide, Severe Weather	1, 4, 5, 9	Public Works	Medium	Staff Time, Grants may be available	On-going
RF-10 – Conduct pre-earthquake and flood assessments for critical and essential facilities and develop a risk reduction strategy, e.g., relocate and/or retrofit facilities.						
New and Existing	Earthquake, Flood, Severe Weather	5, 8, 9, 10, 12	Public Works	Medium	Staff Time, General Funds	Long Term

Table 5-11. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
RF-1	5	High	High	Yes	Yes	No	Medium	High
RF-2	2	Medium	Low	Yes	No	Yes	Medium	Low
RF-3	12	Low	Low	Yes	No	Yes	Medium	Low
RF-4	2	Low	Low	Yes	No	Yes	Medium	Low
RF-5	4	Medium	Low	Yes	No	Yes	Medium	Low
RF-6	4	Medium	Medium	Yes	Yes	No	Medium	High
RF-7	2	Medium	Low	Yes	No	Yes	Medium	Low
RF-8	4	High	High	Yes	Maybe	No	Medium	High
RF-9	4	High	Medium	Yes	Maybe	Partial	Medium	Medium
RF-10	5	Medium	Medium	Yes	No	No	Medium	Low

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

Table 5-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	RF-1, , RF-3, RF-4, RF-5, RF-6,	RF-1, RF-5, RF-9	RF-3, RF-5, RF-6		RF-6	
Drought	RF-2, , RF-3, RF-4, RF-6,	RF-1	RF-3, RF-6		RF-6	
Earthquake	RF.2, RF.3, RF.4, RF.5, RF.7, RF.8, RF.10, RF.11, RF-10,	RF.1, RF.7, RF-10	RF-3, RF-6	RF-8	RF.8	RF-10
Flood	RF-2, , RF-3, RF-4, RF-5, , RF-6, RF-9, RF-10, ,	RF-1, RF-5, , RF-8, RF-9, RF-10,	RF-3, RF-5, RF-6	RF-7,	RF-6	RF-10
Landslide	RF-2, , RF-3, RF-4, , RF-6,	RF-1, , RF-9,	RF-3, RF-6	RF-8, RF-9,	RF-6	

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
	RF-9, RF-10,					
Severe Weather	RF-2, , RF-3, RF-4, , RF-6, RF-9, RF-10,	RF-1, , RF-7, RF-9, RF-10,	RF-3, RF-6	RF-7, RF-8, RF-9	RF-6, RF-7	RF-10
Volcano	RF-2, , RF-3, RF-4, , RF-6,	RF-1,	RF-3, RF-6		RF-6	
Wildfire	RF-2, , RF-3, RF-4, , ,	RF-1, , RF-7	RF-3, RF-6, RF-7	RF-7,		

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

6. TOWN OF YACOLT

6.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Stephanie Fields, Clerk/Treasurer
PO Box 160
Yacolt, WA. 98675
360.686.3922
e-mail:
clerk@townofyacolt.com

Alternate Point of Contact

Katelyn Listk, Mayor
PO Box 160
Yacolt, WA. 98675
360.686.3922
e-mail: mayorlistek@townofyacolt.com

6.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—1908
- Current Population—1,686 as of 2020 according to the US Decennial Census estimates.
- Population Growth—Between 2010 and 2020 there has been a 6.5% population increase according to the U.S. Census.
- Location and Description—The small town of Yacolt is nestled in the foothills of the Cascade Mountains in the shadow of Mt. St. Helens. It is on the Scenic Route in North Clark County. Yacolt boasts country living with easy access to the luxuries of the city. Both Vancouver and Portland, Oregon are just a short drive away. Yacolt schools are in the Battle Ground School District and it is home to North Clark Little League. The local library is Fort Vancouver Regional Library. Yacolt is located in the 18th Legislative District in Clark County.
- Brief History—Yacolt was originally named Garner, named for the family who homesteaded 160 acres in 1887. The post office was officially established in 1895 with two locations, one named Garner and the other named Yacolt. Over time, the Yacolt name won out. Yacolt translates to “valley of the demons” or “haunted place.” It was named for a Native American legend about several children camping in Yacolt, many years ago, who wandered away from camp never to be seen again. It was believed that evil spirits had taken them. In September 1902, Yacolt experienced the largest fire in the state history. The fire is now infamously known as the Yacolt Burn. At the time of the fires, the town consisted of 15 buildings and was almost completely destroyed by the fire. The fire’s origin is still unknown; however, there was speculation that it was an accident resulting from local loggers working. The fire burned over 370 square miles and resulted in 38 fatalities. Despite this massive disaster, Yacolt was officially incorporated on July 31, 1908. In 2008, the town celebrated its 100th anniversary.
- Climate—Seasonal weather includes temperatures in the summer of over 80 and lows of 51, winter ranges from high 47 to lows of 23. The average rain fall in summer is 1.6 inches, and 6.4 inches in the winter.

- **Governing Body Format**—Mayor-Council Forum is made up of 5 Council Members who are elected and assumes responsibility for the adoption of this plan; the Mayor and Administration will oversee its implementation. The council members are responsible for budget creation and general governance of the Town. The Mayor is responsible for overseeing the budget expenditures and administration.
- **Development Trends**—The Town of Yacolt continues to research the development of a sewer system, there is very little development opportunities due to the lack of such a system. A small housing development is planned for 2023.. Future plans include some beautification centrally to help entice potential business and industry to the area.

6.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 6-1. An assessment of fiscal capabilities is presented in Table 6-2. An assessment of administrative and technical capabilities is presented in Table 6-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 6-4. Classifications under various community mitigation programs are presented in Table 6-5. An assessment of education and outreach capabilities is presented in Table 6-6.

Table 6-1. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: Yacolt adopted revised international building codes 2012 edition by Ordinance #527- #530 in February 2015.	Yes	No	Yes
Zoning Code Comment: Current Zoning is regulated by Ordinance 371 which was adopted on February 3, 1997 There have been several amendments to this ordinance and it is projected to be re-written in 2017.	Yes	No	Yes
Subdivisions Comment: Zoning Ordinance # 371 and International Revised Building Codes as adopted by Ordinance # 527 regulate subdivisions	Yes	No	Yes
Stormwater Management Comment: Stormwater Protection Management Plan was adopted in June of 1999 by Ordinance # 385	Yes	No	Yes
Post-Disaster Recovery Comment: N/A	No	No	No
Real Estate Disclosure Comment: N/A	No	No	No
Growth Management Comment: Yacolt adopted the Growth Management Plan on August 19, 2013 by Resolution # 497	Yes	Yes	Yes
Site Plan Review Comment All Site Plan reviews are completed by the Town of Yacolt building inspector and engineer of record at the time of submittal and regulated by Ordinance # 371 adopted in 1997 and the revised building codes 2012 edition as adopted by Ordinance \# 527	Yes	No	No
Environmental Protection Comment: Ordinance # 440 was adopted for the protection of public health, safety, welfare, resource land and critical land areas, on April 17, 2006	Yes	No	Yes
Flood Damage Prevention Comment: Ordinance # 502 was adopted on August 6, 2012 establishing Region X flood plain damage prevention	Yes	No	Yes
Emergency Management	Yes	Yes	Yes

	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: The Town of Yacolt currently has Interlocal agreements or MOU's for emergency services with the following local jurisdictions Clark County Fire District 13, Cowlitz Fire and Rescue, Clark County Sheriff's Office, CRESA, GETS, GEM, M RSC and Southwest Regional Transportation.			
Climate Change Comment: N/A	No	No	No
Other Comment: N/A	N/A	N/A	N/A
General or Comprehensive Plan Is the plan equipped to provide linkage to this mitigation plan? Comment: Sections 2,3 and 5 of Yacolt Comprehensive Plan	Yes	No	Yes
Capital Improvement Plan Yacolt's Capital Improvement plan addresses the following Capital Facilities: Stormwater, Streets, Utilities, Parks/Open spaces, Schools, Law Enforcement, and Electrical to name a few. This plan was updated and adopted in 2013 and will be updated again in 2023. How often is the plan updated? Every 7-10 years Comment:	Yes	No	Yes
Floodplain or Watershed Plan Comment: N/A	No	No	No
Stormwater Plan Comment: Ordinance # 385 Stormwater Facility Maintenance	Yes	No	No
Habitat Conservation Plan Comment: N/A	No	No	No
Economic Development Plan Comment: N/A	No	No	Yes – dependent on funding
Shoreline Management Plan Comment: N/A	No	No	No
Community Wildfire Protection Plan Comment: N/A	No	No	No
Forest Management Plan Comment: N/A	No	No	No
Climate Action Plan Comment N/A	No	No	No
Other Comment: N/A	N/A	N/A	N/A
Comprehensive Emergency Management Plan Comment: Yacolt adopted Resolution # 316 a Model for Regional Emergency Management Work plan and Intergovernmental Agreement for Regional Emergency Management in 1997. That plan is currently under review and is being updated for adoption by the end of 2016.	No	Yes	Yes
Threat & Hazard Identification & Risk Assessment	Yes	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: Yacolt adopted Resolution # 510 in 2014 to be insured by Association of WA. Cities Risk Management Service Agency.			
Post-Disaster Recovery Plan Comment: N/A	No	No	No
Continuity of Operations Plan Comment: N/A	No	No	No
Public Health Plan Comment: N/A	No	No	No

Table 6-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
General Operating Funds	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Unknown
State-Sponsored Grant Programs (TIB and Dept of Ecology)	Yes
Development Impact Fees for Homebuyers or Developers - Park Impact Fee, Transportation Impact Fee, Stormwater fee	Yes
Other	No

Table 6-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Contract Support
Engineers or professionals trained in building or infrastructure construction practices	Yes	Contract Support
Planners or engineers with an understanding of natural hazards	Yes	Contract Support
Staff with training in benefit/cost analysis	Yes	Contract Support
Surveyors	Yes	Contract Support
Staff capable of making substantial damage estimates	No	
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	All Departments
Grant writers	Yes	Administration

Table 6-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	1995

Criteria	Response
When did the Flood Insurance Rate maps become effective?	8/16/2012
What local department is responsible for floodplain management?	Public Works Director
Who is your floodplain administrator? (department/position)	Public Works Director
Is this a primary or auxiliary role?	Auxiliary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	8/10/2012
Does your floodplain management program meet or exceed minimum requirements?	Exceed
If so, in what ways?	Region X 100 year flood plain Maps base flood elevations even though our designation does not require
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
If no, please state why.	
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
If so, what type of assistance/training is needed?	Subdivision Training
Does your jurisdiction participate in the Community Rating System (CRS)?	No
If so, is your jurisdiction seeking to improve its CRS Classification?	No
If not, is your jurisdiction interested in joining the CRS program?	No
How many Flood Insurance policies are in force in your jurisdiction? ^a	4
What is the insurance in force? ^a	\$683,200
What is the premium in force? ^a	\$7,719
How many total loss claims have been filed in your jurisdiction? ^a	0
How many claims were closed without payment/are still open? ^a	0
What were the total payments for losses? ^a	\$0

a. According to FEMA records as of 11/30/2015

Table 6-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	Date
Building Code Effectiveness Grading Schedule	No	N/A	Date
Public Protection	No	N/A	Date
Storm Ready	No	N/A	Date
Fire wise	No	N/A	Date

Table 6-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes, Mayor and Clerk
Do you have personnel skilled or trained in website development?	Yes, Mayor
Do you have hazard mitigation information available on your website?	No
If yes, please briefly describe.	

Criteria	Response
Do you utilize social media for hazard mitigation education and outreach? If yes, please briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, please briefly describe.	No
Do you have any established warning systems for hazard events? If yes, please briefly describe.	No

6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

6.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- Ordinance 440 Critical Area , it provides setbacks for structures from flood plains
- We have adopted all of the international building codes of Washington including geographical hazards and seismic activity.

6.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Comprehensive Plan—Add future capital facilities funding for wildfire and include by reference.
- Zoning Ordinance 371 updated to be inclusive of all future emergency plans
- Ordinance #443 Emergency Management Plan, in order to be prepared for emergency
- Capital Improvement Plan – Review and add future improvements to support all areas of hazard plan.

6.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 6-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm	N/A	4/21/2016	unknown
Severe Storm	1825	12/12/2008	unknown
Severe Storm	1682	12/14/2006	unknown
Severe Storm	1671	12/02/2006	unknown
Severe Storm	N/A	6/27/2001	unknown
Earthquake	1361	2/28/2001	unknown

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm	1159	12/26/1996	unknown
Severe Storm	1079	11/7/1996	unknown
Flood	1100	1/26/1996	unknown
Flood	N/A	8/22/1989	unknown
Volcano	623	5/18/1980	unknown
Flood	545	12/10/1977	unknown
Flood	185	12/29/1964	unknown

6.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- Wildfire residential and commercial lots as developed are vulnerable including necessary services : Yacolt Town Hall, North County Fire District 13, Yacolt Primary School.

6.7 HAZARD RISK RANKING

Table 6-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe weather	48	High
2	Wildfire	36	High
3	Earthquake	32	High
4	Landslide	27	Medium
5	Flood	18	Medium
6	Drought	1	Low
6	Volcano	1	Low
7	Dam failure	0	None

6.8 STATUS OF PREVIOUS PLAN INITIATIVES

Because of the significant amount of time that has passed since the development of the original hazard mitigation plan, the status of previously identified actions are unknown. Many actions were to be implemented by other agencies and were not within the capabilities of the Town of Yacolt. The previously identified actions were reviewed as part of the plan development process to determine if any should be carried over to the 2016 hazard mitigation plan. Actions that were deemed appropriate and within the capabilities of the Town of Yacolt are included in the following tables.

Table 6-9. Status of Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Conduct pre-earthquake assessments for critical and essential facilities and develop a risk reduction strategy		X	
Comment:			
Develop a system for public awareness on a semiannual basis for emergency preparedness using meetings, social media and automation and other electronic methods.		X	
Comment:			
Collectively work with local agencies to encourage partnerships to advise the public of no burn policies as preventative measures.		X	
Comment:			
Identify and participate in opportunities for strategic relations between emergency management and social service providers		X	
Comment:			
Work collectively with local, state and federal agencies to update crucial planning and development plans for the long term by incorporating the recommendations of risk assessment in the hazard mitigation plan as part of planning and development.		X	
Comment:			
Develop a business resumption model or Continuity of Operations Plan		X	
Comment:			
Develop priority routes in and out of town ensuring access for emergency vehicles and all residents for effective response and recovery from disaster events.		X	
Comment:			
Promote development off of the floodplain, supporting the use of mapping technology and ensuring all professionals are state certified and licensed in geographical elevations		X	
Comment:			
Promote Clean Water Programs and develop storm water basin plans		X	
Comment:			
Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority.		X	
Comment:			
Integrate the hazard mitigation plan into other plans, programs, ordinances, codes and databases that dictate land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community.		X	
Comment:			
<p>Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP:</p> <ul style="list-style-type: none"> • Enforcement of the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. 		X	

6.9 Hazard Mitigation Action Plan and Evaluation of Recommended Actions

Table 6-10 lists the actions that make up the town of Yacolt hazard mitigation action plan. Table 6-11 identifies the priority for each action. Table 6-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 6-10. Hazard Mitigation Action Plan Matrix 2023-2028

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
YA-1—Conduct pre-earthquake assessments for critical and essential facilities and develop a risk reduction strategy.						
Existing	Earthquake	4,10,12	Public Works	Medium	Staff time, general fund, HMGP and PDM for implementation	Short term
YA-2—Develop a system for public awareness on a semiannual basis for emergency preparedness using meetings, social media and automation and other electronic methods.						
New and Existing	All Hazards	1,2,3,5,6,10, 12	Town Staff, CRESA,	High	Staff time, general fund	Long term
YA-3—Collectively work with local agencies to encourage partnerships to advise the public of no burn policies as preventative measures.						
New and Existing	Wildfire	1,2,4,9,12	Fire District 13, Town Staff, Fire Marshall,	Medium	General funds, staff time	Long term
YA-4—Identify and participate in opportunities for strategic relations between emergency management and social service providers						
N/A	All hazards	2,5,6,9,10	CRESA, Red Cross	Low	Operating Budget	Short term
YA-5—Work collectively with local, state and federal agencies to update crucial planning and development plans for the long term by incorporating the recommendations of risk assessment in the hazard mitigation plan as part of planning and development.						
New and Existing	All Hazards	1,4,5,6,12	Public Works, Community Development, Clark County, Dept. of Ecology,	High	Operating Budget	Long Term
YA -6—Develop a business resumption model or Continuity of Operations Plan						
New and Existing	All Hazards	3,4,5,10	Town Staff, Local Business Owners, CRESA, Community Development	Medium	Operating Budget, Possibly UASI	Short Term
YA-7—Develop priority routes in and out of town ensuring access for emergency vehicles and all residents for effective response and recovery from disaster events.						
New and Existing	All Hazards	4,5,6,9,11,	Fire District 13, Fire Marshall, Clark County, Yacolt Public Works	High	Operating Budget, State and federal agencies, Possibly FP&S grants	Short term
YA-8—Promote development off of the floodplain, supporting the use of mapping technology and ensuring all professionals are state certified and licensed in geographical elevations						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	Landslides Floods	1,5,6,7,9,10 2	Community Development, GIS, Planning and Development, Public Works	Medium	Operating Budget	
YA-9—Promote Clean Water Programs and develop storm water basin plans						
Existing	Floods	1,2,5,6,7,8,9, 12	Public Works, Community Development, Planning	Medium	Operating Budget, state and federal resources, Possibly EPA Grants	Short term
YA-10—Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority.						
Existing	All Hazards	4, 5, 7, 9, 10	Community Development, Planning	High	HMGP, PDM, FMA, CDBG-DR	Long-term
YA-11—Integrate the hazard mitigation plan into other plans, programs, ordinances , codes and databases that dictate land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community.						
New and Existing	All Hazards	2, 4	Community Development, Planning, Public Works	Low	Staff Time, General Funds	On-going
YA-12—Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: Enforcement of the flood damage prevention ordinance. Participate in floodplain identification and mapping updates. Provide public assistance/information on floodplain requirements and impacts.						
New and Existing	Flood	1, 4, 5, 9	Public Works	Low	Staff Time, General Funds	On-going

Table 6-11. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Priority ^a
YA-1	3	High	Medium	Yes	No	No	Medium	High
YA-2	12	High	High	Yes	Yes	Maybe	High	High
YA-3	5	High	Medium	Yes	Yes	Yes	High	High
YA-4	5	High	Low	Yes	Yes	Yes	High	low
YA-5	5	High	High	Yes	Yes	No	Medium	High
YA-6	4	High	High	Yes	Maybe	No	Medium	High
YA-7	5	High	High	Yes	Yes	No	High	High

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
YA-8	7	Medium	Medium	Yes	Yes	No	Medium	High
YA-9	8	Medium	High	Yes	Maybe	Yes	High	High
YA-10	5	High	High	Yes	Yes	No	Medium	High
YA-11	2	Medium	Low	Yes	No	Yes	High	Low
YA-12	Medium	Low	Yes	No	Yes	High	Low	Medium

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

Table 6-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Wildfire	YA-2,3,4,5,6,7,8, 11	YA- 1,3,5,6,8,10	YA-2,3,4	YA-1,2,3,	YA-2,3,5,7,	YA-1,2,4,5,,8
Drought	YA-2,3,5, 11	YA-10	YA-2,3,4	YA-4,5		
Volcano	YA-1,2,4, 11	YA-4,5,10	YA-2,4	YA-5	YA-2,4,5	YA_1,5
Earthquake	YA-11	YA-10				
Severe Storm	YA-11	YA-10	YA-2,4,5,7		YA-2,4,5,7	
Flood	YA2,4,8, 11, 12	YA-10, 12	YA-2,4,5, 12		YA_2,4,577	
Dam Failure	YA-11, 12	YA-10, 12	YA- 2,4,5, 12		YA-7	
Landslide	YA-2,4,5, 11	YA-5, 10	YA-2,4,5	YA-8	YA-2,4,5,7	

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

6.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Yacolt needs to update its emergency plans to better address the issues of wildfires. We also need utilize state and federal funding to make necessary and vital changes to how we address the concerns of hazards

7. CITY OF VANCOUVER

7.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Gene Juve, Emergency Manager
PO Box 1995
Vancouver, WA 98668-1995
Telephone: 360-487-8603
e-mail Address: gene.juve@cityofvancouver.us

Alternate Point of Contact

Geraldene Moyle, General Services Director
PO Box 1995
Vancouver, WA 98668-1995
Telephone: 360-487-8633
e-mail Address: geraldene.moyle@cityofvancouver.us

7.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—January 23, 1857
- 2021 Population—190,915
- Population Growth—Future growth through 2035 for Clark County as a whole is projected by OFM to most likely average approximately 1.3 percent per year. The City of Vancouver has proportionately less buildable land than Clark County and is anticipated to grow at a slightly slower annual pace on average, although future annexation may result in higher growth.
- Location and Description—The City of Vancouver is located on the Columbia River, the largest river in the Pacific Northwest. Located 106 miles upriver from the Pacific Ocean on the Columbia River, Vancouver is on the North shore across the river from Portland, OR. Vancouver is the largest city in southwest Washington and the gateway to the Columbia River Gorge National Scenic area. Vancouver has a robust port, thriving waterfront and community connection with the river through waterfront redevelopment, better public access and trails as well as parks and educational facilities that tie our past with our future and the Columbia River. Most properties adjacent to the border of Vancouver are within unincorporated Clark County; however, Vancouver shares much of its easternmost boundary with the City of Camas.
- Brief History—In 1825, Vancouver became headquarters for the Hudson’s Bay Company. For many years, Vancouver was the center of all fur trading in the Pacific Northwest due to its vital location on the Columbia River. Over the century, Vancouver steadily developed. In 1908, the first rail line reached Vancouver. During World War I, Vancouver was home to the world’s largest spruce cut-up mill. The mill made lumber for airplanes that helped win the war in Europe. During World War II, Vancouver’s Kaiser Shipyard built a variety of crafts that contributed greatly to America’s war effort.
- Climate—Vancouver enjoys mild weather with less average annual rainfall than Boston, Washington D.C. or Atlanta. Seasons are distinct. Summer temperatures generally climb into the low 80s. Winter nights rarely fall below 30 degrees Fahrenheit. Average annual rainfall is 42 inches and average annual snowfall is 3 inches.

- **Governing Body Format**—The City of Vancouver is managed by a Council/Manager form of government. The council has seven members including a mayor. The City Council has responsibility for adopting this plan; the City Manager oversees its implementation.
- **Development Trends**—Recent development in the City of Vancouver has consisted primarily of new multifamily housing, which is encouraged by a state development incentive that provides a reduction in property tax for both affordable and market rate housing. Office space development has picked up and the city has initiated several major development projects, including The Heights neighborhood center and the Fourth Plain international project. The city’s premier development site of 32 acres of waterfront development is complete. Overall development is guided by the city’s Comprehensive Plan, which provides the long-term vision and policy direction for managing the built and natural environment in Vancouver and providing necessary public facilities. The Land Use and Development Code contains use and development standards. The Plan and Code contain zoning maps which designate the general categories of uses (e.g. commercial, industrial, residential) that are allowed on individual properties citywide.

7.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 7-1. An assessment of fiscal capabilities is presented in Table 7-2. An assessment of administrative and technical capabilities is presented in Table 7-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 7-4. Classifications under various community mitigation programs are presented in Table 7-5. An assessment of education and outreach capabilities is presented in Table 7-6.

Table 7-1. Legal and Regulatory Capabilities

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code	Yes	No	Yes
<p>Comment: The City’s Building Codes are based on International Building Codes that are adopted by the state. City Building Code is codified at Vancouver Municipal Code (VMC), Title 17; The requirements and standards of this code are implemented and enforced by the Community Development Department. Following is the link to City adopted Building Codes: http://www.cityofvancouver.us/vmc?tid=331&throbber=1</p>			
Zoning Code	Yes	No	Yes
<p>Comment: The City controls land use and many development standards through its zoning code. This is codified at VMC Title 20 and is referred to as the City’s Land Use and Development Code. The requirements and standards of this code are implemented and enforced by the Community Development Department. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1</p>			
Subdivisions	Yes	No	Yes
<p>Comment: The City has approval authority over land divisions of property (short plats, subdivisions, binding site plans.)The procedures and standards that pertain to land divisions are located in VMC 20.320, in the City’s Land Use and Development Code. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1</p>			
Stormwater Management	Yes	No	Yes
<p>Comment: The City has approval authority over storm water management facilities. Under Clean Water Act regulations, local governments in Washington State and those subject to the federal National Pollutant Discharge Elimination System (NPDES) Storm Water Program are required to have stormwater management programs. As authorized by the Clean Water Act, the U.S. Environmental Protection Agency’s NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The City’s Storm Water regulations and standards are codified at VMC Title 14.</p>			

	Local Authority	Other Jurisdiction Authority	State Mandated
Post-Disaster Recovery	Yes	No	No
<i>Comment:</i> The City participated as a primary stakeholder in the development of the Regional Recovery Framework (RDPO 2019) which includes city planning checklists and a framework outline focused on the seven Recovery Support Functions (RSF). Regional Recovery Framework FullPlan.pdf - Google Drive			
Real Estate Disclosure	Yes	No	Yes
<i>Comment:</i> There are several ordinances in Vancouver that require disclosure to a renter or buyer of property, including: VMC Title 8 (Public Peace and Safety): 1) residential rental agreement requirements; 2) rental agreement that waives tenant's remedies is prohibited; 3) additional affirmative defense created for renters; and VMC Title 20 (Land Use and Development): a) notice on title required for residential projects located in a Noise Impact Combining District; b) Plat note required for nearby surface mining operations; c) City may require applicant to complete SEPA public notice requirements. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1			
Growth Management	Yes	No	Yes
<i>Comment:</i> The City's Comprehensive Plan and associated ordinances are in compliance with state GMA law Policy EN-11 states that the City will "(manage development in geologically hazardous areas and floodplains to protect public safety."			
Site Plan Review	Yes	No	No
<i>Comment:</i> The City requires site plan review approval of most commercial, industrial and multi-family projects prior to issuance of a building permit, per VMC 20.270. The procedural requirements and development standards that are applied to site plan reviews are implemented and enforced by the Community Development Department. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1			
Environmental Protection	Yes	No	Yes
<i>Comment:</i> The City has authority to review environmental impacts under the State Environmental Policy Act (SEPA) of any development project not otherwise exempted from SEPA review. The City has adopted the maximum thresholds in state law for triggering SEPA review, which are codified at VMC 20.790. The following ordinances protect the natural environment: Shoreline Management Ordinance, VMC 20.760; Critical Areas Ordinance, VMC 20.740 (includes wetlands, critical habitat, floodplains, and geo-hazard areas); and Tree Conservation Ordinance, VMC 20.770. These laws are implemented and enforced by the Community Development Department. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1 . Additionally, the Water Resources Protection Ordinance (VMC 14.26) sets minimum standards that help protect critical aquifers underlying the entire city, establishes greater standards of compliance for businesses and industries that manage hazardous materials, and creates Special Protection Areas around the City's water stations as an additional safeguard.			
Flood Damage Prevention	Yes	No	Yes
<i>Comment:</i> The City reviews developments in the flood plain under its local floodplain ordinance. which is a part of the Critical Areas Ordinance, VMC 20.740. This ordinance is implemented and enforced by the Community Development Department. See http://www.cityofvancouver.us/vmc?tid=334&throbber=1			
Emergency Management	Yes	No	Yes
<i>Comment:</i> The City of Vancouver has an Emergency Manager and is a participant in the 2018 Clark County Comprehensive Emergency Management Plan http://cresa911.org/emergency-management/response-plans/			
Climate Change	No	No	No
<i>Comment:</i> The City is currently developing a comprehensive Climate Action Plan with aggressive policies and benchmarks designed to achieve zero carbon emissions by 2040. Target date for adoption is 4 th Quarter 2022. The Natural Hazard Mitigation Plan is concurrently going through a revision process to ensure climate change impact is appropriately reflected in the Hazard Identification and Risk assessment process.			
General or Comprehensive Plan	Yes	No	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan?</i> <i>Comment:</i> The City's Comprehensive Plan is undergoing a major revision/update which will include linkage with the Climate Action Plan and Natural Hazard Mitigation Plan. The Comprehensive Plan includes the following elements: land use, housing, capital facilities, utilities, and transportation.			

	Local Authority	Other Jurisdiction Authority	State Mandated
Capital Improvement Plan <i>What types of capital facilities does the plan address? Streets, water, sewer, storm water, parks</i> <i>How often is the plan updated? Every six years. Current CIP runs through 2026</i> Comment: <i>The City has detailed adopted capital improvement plans for all public facilities.</i>	Yes	No	Yes
Floodplain or Watershed Plan Comment:	Yes	Yes	No
Stormwater Plan Comment: <i>Vancouver's Surface Water Management Program is the core administration for coordinating activities required by the federal Clean Water Act and the City's Phase II National Pollution Discharge Elimination System (NPDES) Permit for Western Washington, issued by the WA Department of Ecology. The City's stormwater ordinances and related codes comply with the City's NPDES permit. The City's general permit requirements supplement and clarify the Western Washington Stormwater Manual to provide guidance for local conditions. The City's 2021 Stormwater Management Plan is at www.cityofvancouver.us/sites/default/files/fileattachments/public_works/page/1125/vancouver_-_2021_swmp_final.pdf</i>	Yes	Yes	Yes
Habitat Conservation Plan Comment: <i>The City has wetland and habitat ordinances in place which protect critical areas from development, and regulations that protect endangered species from development in its Fish and Wildlife Conservation Area ordinance, at VMC 20.740.110 http://www.cityofvancouver.us/vmc/7380/20740110-fish-and-wildlife-habitat-conservation-areas?throbber=1</i>	Yes	No	No
Economic Development Plan Comment: <i>The City has adopted the County's Economic Development Plan, dated September 2011, the current edition of the plan.)</i> http://static1.squarespace.com/static/53fcd546e4b09b99036a0e5f/t/54b31812e4b034ff307c51fb/1421023250596/FINAL_Clark+County+ED+Plan+9_2011.pdf	Yes	No	Yes – dependent on funding
Shoreline Management Plan Comment: <i>The City has a locally-adopted Shoreline Management Plan and ordinance (VMC 20.760) which regulates uses in the shoreline environment. The Shoreline Management Plan, adopted in 1975 and updated in 2012, is implemented and enforced by the Community Development Department.</i>	Yes	No	Yes
Community Wildfire Protection Plan Comment: <i>The Fire Department has developed and published a Wildfire Action Plan instructing residents on establishing Defensive Space Zones, planning specific actions as the wildfire threat approaches, and evacuation/survival tips and tools.</i>	YES	No	No
Forest Management Plan Comment: <i>The City has an Urban Forest Management Plan (2007), as well as a tree conservation ordinance that contains regulations and best practices regarding the protection of trees and criteria for removal of trees. This ordinance is codified at VMC 20.770 and is implemented and enforced by the Urban Forester (Public Works Department) and the Community Development Department. Urban Forest Management Plan is at http://www.cityofvancouver.us/sites/default/files/fileattachments/public_works/page/1389/ufmp_fina-web.pdf</i>	No	No	No
Climate Action Plan Comment: <i>The City has a DRAFT Climate Action Plan projected for Council approval in 4th Quarter, 2022.</i>	Yes	No	No
Other Comment: <i>The Regional Disaster Debris Management Plan was completed in December 2018 after a year of planning and close coordination among regional partners. The City of Vancouver Annex outlines a strategy for managing disaster debris operations and assigns critical response roles and responsibilities. It also provides a timeline of activities based on normal, pre-event, response, and recovery time periods; and includes extensive pre-event messaging and implementing documents. Potential Debris Collection Sites have been identified and surveyed.</i>	Yes	N/A	N/A

	Local Authority	Other Jurisdiction Authority	State Mandated
Comprehensive Emergency Management Plan <i>Comment: Vancouver is a participant in the 2018 Clark County Comprehensive Emergency Management Plan. http://cresa911.org/emergency-management/response-plans/</i>	Yes	Yes	Yes
Threat & Hazard Identification & Risk Assessment <i>Comment: Clark County Hazards Identification Vulnerability Analysis- 2011; Document is maintained by CRESA</i>	Yes	Yes	No
Post-Disaster Recovery Plan <i>Comment: The City participated as a primary stakeholder in the development of the Regional Recovery Framework (RDPO 2019) which includes city planning checklists and a framework outline focused on the seven Recovery Support Functions (RSF). Regional Recovery Framework_FullPlan.pdf - Google Drive</i>	Yes	No	No
Continuity of Operations Plan <i>Comment: The City has a citywide COOP which is scheduled for update in 4th Quarter, 2022</i>	Yes	No	No
Public Health Plan <i>Comment: Region IV Public Health Emergency Response Plan – December 2013. Clark County Public Health is the lead agency and the plan is being revised to incorporate lessons-learned during the COVID-19 pandemic.</i>	No	Yes	No

Table 7-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes, in qualifying Census Tracts
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	City charges fees for water and sewer service; and such funds would be restricted to utility-related purposes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Unlikely
Withhold Public Expenditures in Hazard-Prone Areas	Yes, we could if City Council adopts this policy
State-Sponsored Grant Programs	Unknown
Development Impact Fees for Homebuyers or Developers	Yes: May only be used for specific purpose (e.g. Parks, Transportation, Schools, etc.)
City General Fund	Yes, upon specific budget approval by City Council
City Building Fund	Yes, but may only be used for building code/safety – related studies

Table 7-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Development/Public Works/Planning Official/City Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community Development/Public Works/Building Official/City Engineer

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with an understanding of natural hazards	Yes	Community Development/Planning Official
Staff with training in benefit/cost analysis	Yes	Finance Department/Budget Manager
Surveyors	Yes	Public Works/City Surveyor
Staff capable of making substantial damage estimates	No	Not available on-staff
Personnel skilled or trained in GIS applications	Yes	Public Works/Engineering Tech
Scientist familiar with natural hazards in local area	No	No on-staff scientists
Emergency manager	Yes	City Manager's Office
Grant writers	Yes	Public Works/CD/Transportation Planner or Surface Water Analyst

Table 7-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	08/17/81
When did the Flood Insurance Rate maps become effective?	09/05/2012
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Community Development/Land Use Official
<ul style="list-style-type: none"> Is this a primary or auxiliary role? 	Primary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	8/20/2012
<ul style="list-style-type: none"> Does your floodplain management program meet or exceed minimum requirements? 	Meet
<ul style="list-style-type: none"> If so, in what ways? 	N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	6/20/2020
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, please state what they are. 	Yes Case No: 19-10-0377A: Structure built with lowest floor below the based flood elevation; In process of resolution
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, please state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes Refresher course on any new changes to flood plain management best practices is needed
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If so, is your jurisdiction seeking to improve its CRS Classification? If not, is your jurisdiction interested in joining the CRS program? 	No Yes
How many Flood Insurance policies are in force in your jurisdiction?	401
<ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	\$120,901,200 \$332,621
How many total loss claims have been filed in your jurisdiction?	12

Criteria	Response
<ul style="list-style-type: none"> How many claims were closed without payment/are still open? 	6
<ul style="list-style-type: none"> What were the total payments for losses? 	\$113,938

Table 7-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	3	2019
Public Protection	No	N/A	Date
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 7-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes, Laura Shepard (City Communications Director)
Do you have personnel skilled or trained in website development?	Yes, Brian Bates (Web Manager)
Do you have hazard mitigation information available on your website?	No; website currently undergoing revision
<ul style="list-style-type: none"> If yes, please briefly describe. 	
Do you utilize social media for hazard mitigation education and outreach?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Vancouver uses Twitter and Facebook as well as the regional Clark Regional Emergency Alert system to alert the public to potential hazard risks.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
<ul style="list-style-type: none"> If yes, please briefly specify. 	
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Neighborhood Association/Liaison program, local cable TV, city website, public information app
Do you have any established warning systems for hazard events?	
<ul style="list-style-type: none"> If yes, please briefly describe. 	Reverse 911 and “FlashNews” and we have the ability to push out messages using email (EMMA) distribution lists for various departments. Clark Regional Emergency Alert system. The new MyVancouver app also has the potential to allow push messages for those who have signed up, as does the Solid Waste RecycleRight app. Vancouver also participates in the Regional Disaster Preparedness Organization (http://www.portlandoregon.gov/rdpo/) for Portland UASI Region.

7.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into local planning mechanisms.

7.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- City Strategic Plan (2016-2021) at <http://www.cityofvancouver.us/sites/default/files/2016StrategicPlan/index.html> which includes Objective 1.2 (infrastructure), Objective 2.1 (Police, Fire, Emergency – seismic upgrades), and Objective 2.2 (emergency management). (2022 version drafted/pending City Council adoption.)
- City Critical Areas Ordinance (includes regulations for Fish and Habitat Conservation Areas, Frequently Flooded Areas and Geologic Hazard Areas) codified at VMC 20.740
- City Shoreline Management Plan and Ordinance, codified by reference at VMC 20.760. <http://www.cityofvancouver.us/vmc/7384/20760010-purpose?throbber=1>
- City Water System Comprehensive Plan
- City Transportation Improvement Plan
- City General Sewer Plan

7.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- City Strategic Plan (2022-2027) <http://www.cityofvancouver.us/sites/default/files/2016StrategicPlan/index.html>
- City Comprehensive Plan could provide more specific references to the Hazard Mitigation Plan goals, risk assessment and recommendations
- County Regional Disaster Recovery Plan
- City Climate Action Plan (currently in the final stages of development/adoption)

7.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 7-7 lists all past occurrences of natural hazards within the jurisdiction.

Table 7-7. Natural Hazard Event History

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Heat Wave	N/A	6/26-28 2021	N/A
Windstorm	N/A	12/11/2014	N/A
Severe Winter Storm	1825	3/2/2009	N/A
Snow Event	N/A	12/19-26/2008	N/A
Severe Winter Storm	1682	2/14/2007	N/A
Severe Storm, Flooding	1671	12/12/2006	N/A
Severe Winter Storm	N/A	1/6-9/2004	\$160,000 in public sector debris management
Hail, Severe Storm	N/A	6/27/2001	N/A
Earthquake (Nisqually Quake Magnitude 6.8)	1361	2/28/2001	N/A
Severe Winter Storm, Flooding	1159	1/17/1991	N/A

Flood	1100	2/9/1996	\$29M; Damage to 120 businesses and 82 residences
Severe Storm(s)	1079	1/3/1996	N/A
Earthquake (Spring Break Quake Magnitude 5.6)	N/A	3/25/1993	N/A
Wind	N/A	1/10/1988	N/A
Wind	N/A	12/24/1983	N/A
Volcanic Eruption	623	5/21/1980	N/A
Flood	545	12/10/1977	N/A
Hail, Wind	N/A	5/1/1976	N/A
Tornado	N/A	4/5/1972	\$28.3M

7.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- City-Owned Facilities – The resilience of city facilities has been significantly enhanced. The city recently passed a special fire levy that will continue to upgrade our response resiliency. \$60 million will be invested in replacement of Fire Station 3 and Fire Station 6, and fund seismic improvements for Stations 4,5 and 8. Fire Station 11 is in the design phase and will be built to meet seismic facility standards. The new Police Headquarters on Chkalov Drive is undergoing renovation to meet seismic standards for emergency facilities. The city has identified the site of our new Public Works Operations Center with seismic resiliency as a focal point of facility design and operation. When completed, the Center will house our Emergency Operations Center. City Hall, less than 15 years old, is seismic sturdy, with recent expansion of emergency generator capability and upgrades to the air filtration system. A few city buildings are located in the flood plain or in areas susceptible to liquefaction.
- Water System -- Eighty percent of the city’s water distribution system consists of ductile iron pipe, which reduces water losses, and is more resilient to failure in an earthquake, the greatest natural hazard we face. Both the distribution and production systems of the City’s water supply, including treatment and storage facilities, are being made less susceptible to damage from a major earthquake impact. The city recently completed major upgrades to seismic resiliency at Station #1 with new twin reservoirs plus a tower reservoir. Site security improvements included moving communication lines underground and advanced cybersecurity measures. Our Water System Comprehensive Plan continues to guide our capital improvement efforts (i.e. the city recently broke ground at Water Station #5 to replace an existing seismically deficient reservoir with two new storage reservoirs) to increase the resiliency of our water system to natural hazards. The City is also in the design stage to replace an existing reservoir and elevated tank at Water Station #3.
- On-Site Septic Systems – The City still has a number of homes in areas of the community that are still utilizing septic systems. Most have public sanitary sewer directly available to the property. These systems may be more susceptible to failure as the result of an earthquake, liquefaction, or landslides.

- **Sewer System** – The system which includes sewer lines, interceptors, lift stations and treatment plants as well as a sludge incinerator are potentially vulnerable to impacts of earthquakes and liquefaction, landslides and floods. Power disruption resulting from these events or hazards also has the potential to disrupt normal functions.
- **Transportation System** - The City has a number of structures, including bridges and retaining walls that might be damaged or compromised by earthquakes, landslides, flooding or heavy volcanic ash fall. In many cases responsibility for inspecting the soundness of these assets falls on partners or contractors (county, state, consultants) who might be involved in work for others during a major event. Some areas of the community experience occasional shallow flooding which limits the flow of traffic and/or may temporarily isolate access to some areas of the community during periods of localized or Columbia River flooding. Similarly, travel may be impacted or routes need to be closed as a result of snow, storm debris or other weather events; landslides; or hazardous material spills. During short-term or ongoing power grid outages the City’s signal lights and streetlights will not function and this will likely limit traffic flow.
- **Surface Water System** -- There are a number of areas in the community that experience seasonal, shallow urban flooding during prolonged periods of high precipitation. This can impact mobility as well as threaten life and property. Drainage and/or infiltration structures and pipes may become blocked by excess water, debris, sediment, landslides, or volcanic ash. Hazardous material spills may move off-site and contaminate downstream locations if not properly managed.
- **Disaster Debris Planning** – The Regional Disaster Debris Management Plan was completed in December 2018 after a year of planning and close coordination among regional partners. The City of Vancouver Annex outlines a strategy for managing disaster debris operations and assigns critical response roles and responsibilities. It also provides a timeline of activities based on normal, pre-event, response, and recovery time periods; and includes extensive pre-event messaging and implementing documents. Potential Debris Collection Sites have been identified and surveyed.

7.7 HAZARD RISK RANKING

Table 7-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	33	High
2	Earthquake	32	High
3	Flood	9	Low
4	Wildfire	6	Low
5	Landslide	4	Low
6	Volcano	3	Low
7	Dam Failure	3	Low
8	Drought	0	Low

7.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 7-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this revision was prepared.

Table 7-9. Status of Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed
Join FEMA’s Community Rating System (CRS)			X
<i>Comment: Vancouver is not a participant in the CRS program.</i>			
Create Four PSA Videos to educate the public about disaster preparedness.	X		
<i>Comment: CVTV created four video spots that played on our cable stations and were shared on social media. Titles, date created, and links: 1) Great Shake Out 10-9-2020 https://youtu.be/3blCWnu9v0c; 2) STOP, DROP & (rock)’n ROLL! 1-14-2020 https://youtu.be/OSH6BJ1r_C4; 3) Flood Insurance 4-29-2019 https://youtu.be/9HlVv51jKgU; and 4) Defensible Space 2-15-19 https://youtu.be/HYgOpu0ReQw</i>			
Join WASafe, a state program through the Department of Health that provides expert assistance through its team of Safety Assessment Facility Evaluators which can be deployed to evaluate structural safety of buildings	X		
<i>Comment: Vancouver’s Assistant Building Official represents the City in WASafe.</i>			
Implement Low Impact Development Standards for Buildings, Streets, Parking Lots, Storm Water Management Facilities, etc.		X	
<i>Comment: This is an ongoing process Action Item VC-1 in Table 1-9</i>			
Replace Fire Station #2	X		
Replace Fire Station #1	X		
Implement Seismic Retrofit Recommendations of Water Storage Seismic Evaluation		X	
<i>Comment: As distribution pipes are replaced, zinc coated ductile iron is used as a standard throughout the water system. All newly installed pipes located in areas designated as highly liquefiable soils and all water mains 12-inches and greater in size are fully restrained. The City recently replaced three seismically deficient water storage tanks and completed seismic upgrades to three additional water storage tanks. A current construction project will replace an additional tank with two new resilient water storage tanks. A capital improvement plan has been developed that includes strategies for replacing two additional inadequate tanks. The City has been installing emergency generators at multiple sites and currently has the capacity to provide the average day demand water use on back-up power. The City has completed a vulnerability assessment, a water shortage response plan, and an emergency response plan for the water system. Additionally, the system has built in redundancy and capabilities within the distribution system to direct water where it is needed if one part of the system is compromised. Action Item VC-2 in Table 1-9</i>			
Continue Incentive Program for Eliminating Private Septic Systems.		X	
<i>Comment: For the areas that are currently un-sewered, the City has an ongoing capital improvement plan that will continue to install public sanitary sewer collection services in areas where that has not been available. As part of the Capital program the City offers an incentive to connect and financing to encourage residents to connect and decommission existing septic systems. Action Item VC-3 in Table 1-9</i>			
Implement Recommended Priority Improvements from Citywide Sewer System Study.		X	

Comment: A completed Engineering study included an evaluation of condition and vulnerabilities of large diameter pipes in the sewer system (interceptors). The study provided a prioritization of upgrades and repairs to extend the life of pipes and reduce risks of adverse events. The evaluations included consideration of sensitive locations (waterways, soils, population areas, etc.). The City is working through this list of capital projects to address the required upgrades. In another project, the City and its consultant are preparing design plans to upgrade the mothballed sewage pump station, Burnt Bridge Creek Pump Station, to provide flexibility in directing sewage to Vancouver's two wastewater treatment plants, and to alleviate flow through the Burnt Bridge Creek Interceptor, especially during heavy rain events, which currently places the interceptor at risk for sewage overflows. Lastly, in 2018 the City constructed a bypass mitigation system for sewage entering the headworks of Westside Wastewater Treatment Plant. The operations contract for the treatment plants incorporates emergency planning and response activities and preparedness for those assets. Backup power is provided for the treatment plants as well as key lift stations. **Action Item VC-4 in Table 1-9**

Address Areas of Localized Street Flooding and Ensure Bridges are Inspected by Partner Agencies.

X

Comment: The City has a Transportation Improvement Plan and newly authorized dedicated funding that supports our capability to maintain and upgrade the entire transportation and this will address some of the noted vulnerabilities. We work with partners to provide annual bridge inspections and the City's Operations Center and Surface Water Engineering teams coordinate to address known areas of seasonal urban flooding. Operations Center crews are fully prepared to respond to non-catastrophic levels of nature caused hazard events and emergency access priority clearance arterials (for example to access hospitals and schools, etc.) have been pre-identified to be prioritized in response efforts.

Prioritize Surface Water System Improvements that Decrease Vulnerabilities.

X

Comment: Public Works provides ongoing maintenance of the City's surface water infrastructure and Engineering uses a Capital Improvements Program to prioritize and undertake projects that improve system function. **Action Item VC-5 in Table 1-9**

Finalize and Adopt Regional Debris Management Plan.

X

Comment: The Regional Disaster Debris Management Plan was completed in December 2018 after a year of planning and close coordination among regional partners. The City of Vancouver Annex outlines a strategy for managing disaster debris operations and assigns critical response roles and responsibilities. It also provides a timeline of activities based on normal, pre-event, response, and recovery time periods; and includes extensive pre-event messaging and implementing documents. Potential Debris Collection Sites have been identified and surveyed.

Replace City Operations Center located at 4711 NE Fourth Plain Blvd.

X

Comment: The City has acquired property on NE 94th Avenue, north of Padden Parkway, and will begin design of a replacement Operations Center (to occur within 5-6 years) to meet current codes and seismic standards. The existing operations center will either be repurposed or demolished. **Action Item VC-6 in Table 1-9**

Consolidate Vancouver Police Headquarters (currently located at 605 E Evergreen Blvd) from aging, vulnerable building to newer, seismic compliant Chkalov Building, located at 521 SE Chkalov Drive. Repurpose current Headquarters building for non-emergency related use.

X

Comment: This is a destination/location change to a more suitable and resilient alternate facility. **Action Item VC-7 in Table 1-9**

Evaluate and Prioritize Properties in Extreme Hazard Areas for Future Buy-out

X

Comment: This is an ongoing process. **Action Item VC-8 in Table 1-9**

Develop a Plan and Agreement to Increase Elevation of Units within Lakeside Mobile Estates. Work with property owner on a plan and schedule for raising or removing mobile homes that are located in the 100-year floodplain, and identification of possible grant funding that can assist in the costs of such enhancements.		X	
<i>Comment: This is an ongoing process pending a funding source. Action Item VC-9 in Table 1-9</i>			
Require the retrofitting of older, vulnerable or critical structures located on NEHRP 'E' and 'F' soils. This would only apply when substantial alterations or additions are proposed to such structures and will be applied at the time a building permit is reviewed.		X	
<i>Comment: This is an ongoing process. Action Item VC-10 in Table 1-9</i>			
Encourage non-structural retrofitting where appropriate in the City, given scope of project and intended use of building.		X	
<i>Comment: This is an ongoing process. Action Item VC-11 in Table 1-9</i>			
Retrofit hazardous material containment areas.	X		
<i>Comment: The HAZMAT containment areas have been retrofitted.</i>			
Encourage non-structural retrofitting of hazardous materials containment through the establishment of a program to encourage structural retro-fitting of hazardous materials containment during City of Vancouver Fire Marshal operational permit inspections.		X	
<i>Comment: This is an ongoing process. Action Item VC-12 in Table 1-9</i>			
Develop an automated method to notify the public of events during a disaster.	X		
<i>Comment: CRESA has developed, tested and implemented the Clark Regional Emergency Alert system... available to all jurisdictions.</i>			
Determine critical government functions and establish redundancy for these functions Action Item VC-13 in Table 1-9		X	
<i>Comment: The City's Continuity of Operations (COOP) Plan is scheduled for revision in the 4th Quarter of 2022.</i>			
Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: <ul style="list-style-type: none"> - Enforcement of the flood damage prevention ordinance - Participate in floodplain identification and mapping updates - Provide public assistance/information on floodplain requirements and impacts. 		X	
<i>Comment: This is an ongoing process. Action Item VC-14 in Table 1-9</i>			

Tailor and Adopt a Model Post-Disaster Recovery Ordinance for Vancouver	X		
<i>Comment: The City participated in development of the Regional Recovery Framework Plan which is focused on the six FEMA Recovery Support Functions (RSFs) and used to tailor our disaster-specific recovery process.</i>			
Require the construction of earthquake-resilient structures through application of Building Codes as applicable	X		
<i>Comment: Incorporated into standard review/permitting procedures</i>			
Support development of integrated County storm water basin-wide plans	X		
<i>Comment: The City supports the county effort through annual coordination and collaboration.</i>			
Promote development outside of the floodplain.		X	
<i>Comment: This includes responding to any directive from a recent court case that will make development in floodplains much more restrictive due to ESA-related concerns. Puget Sound is under this order currently (Phase 1) and the rest of the state including Vancouver is under Phase 2, which is not yet in effect but anticipated in the next several years. This is an ongoing process. Action Item VC-15 in Table 1-9</i>			
Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy		X	
<i>Comment: This is an ongoing process. Action Item VC-16 in Table 1-9</i>			
Integrate the hazard mitigation plan into other plans, programs, ordinances, codes and databases that dictate land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community.		X	
<i>Comment: This is an ongoing process. Action Item VC-17 in Table 1-9</i>			
Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.	X		
<i>Comment: Fire, Police and Public Works have recently completed a review and update of Emergency Transportation Routes (ETRs), as well as alternative routing options to avoid known hazard-vulnerable streets.</i>			
Develop priority routes throughout the City and improve these routes to a higher standard.	X		
<i>Comment: In addition to the ETRs mentioned above, Public Works reviews and updates street conditions during their annual Transportation Improvement Plan review and project prioritization.</i>			
Ensure appropriate equipment is available during events.	X		
<i>Comment: Fire, Police and Public Works annually review their equipment capabilities and take appropriate action to ensure sufficient resources are available for anticipated needs.</i>			

Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.

X

Comment: This is an ongoing process. Action Item VC-18 in Table 1-9

Target development and preparedness efforts of Tier II hazardous material facilities.

X

Comment: This is an ongoing process. Action Item VC-19 in Table 1-9

7.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 7-10 lists the actions that make up the City of Vancouver hazard mitigation action plan. Table 7-11 identifies the priority for each action. Table 7-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Key to Acronyms:

CDD Community Development Department

CMO City Manager's Office

EPH Economic Prosperity and Housing Department

FEMA Federal Emergency Management Agency

VPD Vancouver Police Department

Table 7-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
VC-1— Implement Low Impact Development Standards for Buildings, Streets, Parking Lots, Storm Water Management Facilities, etc.						
New	Flood, Severe Storms	2, 4, 6, 7, 11, 12	CDD/Public Works*	Medium	Staff Time, General Fund	Short-term
VC-2— Implement Seismic Retrofit Recommendations of Water Storage Seismic Evaluation.						
Existing	All Hazards	2, 4	CDD	None	Capital Budget	Short-term
VC-3— Continue Incentive Program for Eliminating Private Septic Systems.						
Existing	Earthquake, Flood, Landslide	5, 7, 11	Public Works	Medium	Capital Budget	On-going
VC-4— Implement Recommended Priority Improvements from Citywide Sewer System Study.						
New	Earthquake	2, 5, 9, 10, 12	Public Works	High	Budget Surplus	Short-term
VC-5— Prioritize Surface Water System Improvements that Decrease Vulnerabilities.						
Existing/New	Flood, Landslide	5, 8, 10, 12	Public Works	Medium	Capital Budget	Short-term

VC-6— Replace City Operations Center located at 4711 NE Fourth Plain Blvd.						
New	Earthquake	5, 9, 10	Public Works	High	Capital Budget	Long-term
VC-7— Consolidate Vancouver Police Headquarters						
Existing	Earthquake	5, 9, 10	VPD*/Public Works	High	Capital Budget	Long-term
VC-8— Evaluate and Prioritize Properties in Extreme Hazard Areas for Future Buy-out						
Existing	Flood, Landslide	2, 9, 12	CDD	Medium	General Fund, HMGP, PDM, FMA	Short-term
VC-9— Develop a Plan and Agreement to Increase Elevation of Units within Lakeside Mobile Estates. Work with property owner on a plan and schedule for raising or removing mobile homes that are located in the 100-year floodplain, and identification of possible grant funding that can assist in the costs of such enhancements.						
Existing	Flood	2, 9, 12	CDD	Medium	Staff Time, General Fund	Short-term
VC-10— Require the retrofitting of older, vulnerable or critical structures located on NEHRP 'E' and 'F' soils. This would only apply when substantial alterations or additions are proposed to such structures and will be applied at the time a building permit is reviewed.						
Existing	Earthquake	2, 4, 5	CDD	Low (cost to City)	Staff Time, Building Fund	On-going
VC-11— Encourage non-structural retrofitting where appropriate in the City, given scope of project and intended use of building.						
Existing	Earthquake	2, 4, 5	CDD	Low (cost to City)	Staff Time, Building Fund	On-going
VC-12— Encourage non-structural retrofitting of hazardous materials containment through the establishment of a program to encourage structural retro-fitting of hazardous materials containment during City of Vancouver Fire Marshal operational permit inspections.						
Existing	Fire, Flood	2, 4, 5	Fire	Low	Operating	On-going
VC-13— Determine critical government functions and establish redundancy for these functions.						
Existing	All Hazards	1, 4, 8	CMO/Emergency Management	Low	Staff Time, General Fund	Short-term
VC-14— Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP						
New/Existing	Flood	1, 4, 5, 9	CDD*/Public Works	Low	Staff Time	On-going
VC-15— Promote development outside of the floodplain. This includes responding to any directive from a recent court case that will make development in floodplains much more restrictive due to ESA-related concerns. Puget Sound is under this order currently (Phase 1) and the rest of the state including Vancouver is under Phase 2, which is not yet in effect but anticipated in the next several years.						
New	Flood	2, 4, 5, 7, 10, 11	CDD	Low	Staff Time, General Fund	On-going

VC-16— Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy

Existing	Earthquake	4, 5, 10, 12	CDD	High	Building Fund	Long-term
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VC-17— Integrate the hazard mitigation plan into other plans, programs, ordinances , codes and databases that reflect land use decisions, unified development, comprehensive planning, critical areas ordinances, stormwater etc. within the community.

New and Existing	All Hazards	1, 2, 4, 6	CDD	Low	Staff Time, General Funds	Long-term
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VC-18— Where appropriate, support retro-fitting, relocation or acquisition from willing property owners of structures located in hazard prone areas to protect structures from future damage, with repetitive and severe repetitive loss as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.

Existing	All Hazards	4, 5, 7, 9, 10	CDD	High	HMGP, PDM, FMA, CDBG-DR	Short-term
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VC-19—Build/relocate Fire Stations #3 and #6 to be better positioned to respond to emergencies and also to meet current seismic codes.

Existing	All Hazards	4,5,8,9,10,12	Fire*/Public Works/CDD	High	Special Levy	Short-term
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VC-20—Upgrade Fire Stations #4, #5, and #8 to meet earthquake resilience standards.

Existing	Earthquake	4,5,8,9,10,12	Fire*/Public Works/CDD	High	Budgeted Capital Improvements	Short-term
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VC-21—Complete construction of new Fire Station #11 in order to be better positioned to respond to emergencies and also to meet current seismic codes.

Existing	All Hazards	4,5,8,9,10,12	Fire*/Public Works/CDD	High	Special Levy	Short-term
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VC-22—Incorporate Climate Action Plan natural hazard mitigation actions into the NHMP.

Existing	All Hazards	4,5,8,9,10,12	CMO/EPH	Low	Staff Time	Short-term
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Table 7-11. Mitigation Strategy Priority Schedule

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

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
VC-7	3	High	High	Yes	No	Yes	Medium	Low
VC-8	3	Medium	Medium	Yes	Maybe	No	Medium	Medium
VC-9	3	Low	Medium	Yes	Maybe	No	Low	Medium
VC-10	3	High	Low	Yes	No	Yes	High	Low
VC-11	3	High	Low	Yes	No	Yes	High	Low
VC-12	3	Medium	Low	Yes	Maybe	Yes	High	Medium
VC-13	3	High	Medium	Yes	No	No	Medium	Low
VC-14	4	Medium	Low	Yes	No	Yes	High	Low
VC-15	5	High	Low	Yes	No	Yes	High	Low
VC-16	4	High	High	Yes	Maybe	No	Medium	Medium
VC-17	4	High	Medium	Yes	No	No	High	Low
VC-18	5	High	High	Yes	Yes	Maybe	Medium	High
VC-19	6	High	High	Yes	No	No	High	Low
VC-20	6	High	High	Yes	No	Yes	High	Low
VC-21	6	High	Low	Yes	No	No	High	Low
VC-22	6	Medium	Low	Yes	Maybe	Yes	High	Medium

Table 7-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	VC-15, VC-18	VC-15, VC-18, VC-19, VC-20, VC-21	VC-17	VC-22	VC-13	
Drought	VC-2			VC-22		
Earthquake	VC-16, VC-14	VC-3, VC-10, VC-11, VC-16, VC-17, VC-18, VC-19, VC-20, VC-21	VC-16, VC-17		VC-7, VC-13, VC-19, VC-20, VC-21	VC-2, VC-6, VC-10, VC-16, VC-19, VC-20, VC-21
Flood	VC-1, VC-5, VC-12, VC-15, VC-14, VC-18	VC-3, VC-5, VC-8, VC-9, VC-12 VC-15, VC-17, VC-18	VC-9, VC-17	VC-4, VC-12, VC-15, VC-22	VC-13	VC-2
Landslide	VC-1, VC-3, VC-5, VC-17, VC-18	VC-3, VC-5, VC-8, VC-17, VC-18	VC-17	VC-22	VC-13	VC-2
Severe Weather	VC-14	VC-17, VC-19, VC-20, VC-21		VC-4, VC-22	VC-13	VC-2, VC-4, VC-19, VC-20, VC-21
Volcano	VC-14	VC-17			VC-13	

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Wildfire	VC-14	VC-17		VC-19, VC-20, VC-21, VC-22	VC-13	VC-19, VC-20, VC-21

8. CITY OF WASHOUGAL

8.1 NATURAL HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Mitch Kneipp, Community Development Director
1701 C Street
Washougal, WA 98671
360-835-8501 x604
mitch.kneipp@cityofwashougal.us

Alternate Point of Contact

Trevor Evers, Public Works Director
1701 C Street
Washougal, WA 98671
360-835-8501 x202
trevor.evers@cityofwashougal.us

8.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—1908
- Current Population—17,390 as of April 1, 2012(2022 OFM estimate)
- Population Growth—Based on OFM data the City of Washougal has seen relatively steady growth with a population increase of over 54% from 7975 in the year 2002 to 17,390 in 2022.
- Location and Description—The City is located in Clark County, in southwest Washington along the Columbia River on the Oregon/Washington border. The City lies approximately 23 miles northeast from Portland, Oregon, 18 miles east of Vancouver, Washington and approximately 180 miles south of the City of Seattle. State Route 14 bisects the City as it heads east into the Columbia River Gorge National Scenic Area which defines the City’s easternmost boundary and Washougal is immediately east of the City of Camas. Washougal currently occupies a total of approximately 5.7 square miles.
- Brief History—Joseph Durgan and Lewis Love purchased 20-acres from Richard Ough’s Donation Land Claim and mapped the town of Washougal and platted it on May 6, 1880. The area was known for its fertile lowlands and supported dairy cattle, farming and logging. When the railroad came to town in 1908 it opened up Washougal to the transcontinental railroad lines and with that growth the City incorporated. The town steadily grew and in 1912 Pendleton Woolen Mills was established and has been the largest employer in the City and a thriving business here ever since. The City continues to thrive and has undertaken an effort to revitalize its downtown which has taken off and that, coupled with a successful Port offering a Marina and Industrial Park, the City is poised for growth.
- Climate—Washougal has a mild climate with an average of 50 inches of rain each year with about five days each winter where snow (usually unmeasurable) or icy conditions exist. The high temperature in the summer is around 82°F and the low temperature in winter is around 34°F.
- Governing Body Format—The City of Washougal operates under the laws of the State of Washington applicable to a Code City with a Mayor-Council form of government. Council members are elected by the citizens of the City and serve four-year terms as part-time elected officials acting in a legislative capacity. The Council holds regular meetings twice a month on second and fourth Mondays and special meetings as

needed. All meetings are open to the public as provided by law and agenda items are prepared in advance. The City Council of the City of Washougal assumes responsibility for the adoption of this plan; the City of Washougal Administration will oversee its implementation.

- **Development Trends**—Washougal has historically been a bedroom community and residential development continues to do well. The City has invested in its downtown with 6.5-million dollars of street improvements and private investment has followed. The Port of Camas/Washougal entered into a development agreement with the City for development of their 120-acre industrial park known as Steigerwald Commerce Center and the first phase of the development is nearly complete. Another development agreement between the Port, a private developer and the City will facilitate the redevelopment of a former lumber yard along the Columbia River into a mixed use development including parks, commercial and residential uses.

8.3 CAPABILITY ASSESSMENT

An assessment of legal and regulatory capabilities is presented in Table 8-1. An assessment of fiscal capabilities is presented in Table 8-2. An assessment of administrative and technical capabilities is presented in Table 8-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 8-4. Classifications under various community mitigation programs are presented in Table 8-5. An assessment of education and outreach capabilities is presented in Table 8-6.

Table 8-1. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code Comment: Washougal Municipal Code 15.04	Yes	No	Yes
Zoning Code Comment: Washougal Municipal Code Title 18	Yes	No	Yes
Subdivisions Comment: Washougal Municipal Code Title 17	Yes	No	Yes
Stormwater Management Comment: Washougal Municipal Code 14.28 and Washougal Engineering Standards Chapter 4	Yes	No	Yes
Post-Disaster Recovery Comment: N/A	No	No	No
Real Estate Disclosure Comment: N/A	No	No	No
Growth Management Comment: RCW 36.70A / City of Washougal Comprehensive Plan	Yes	Yes	Yes
Site Plan Review Comment: Washougal Municipal Code 18.88	Yes	No	No
Environmental Protection Comment: Washougal Municipal Code Title 16	Yes	No	Yes
Flood Damage Prevention Comment: Washougal Municipal Code 16.28	Yes	No	Yes
Emergency Management Comment: Washougal Municipal Code 2.48	Yes	No	Yes
Climate Change Comment: N/A	No	No	No
Other Comment: N/A	No	No	No
General or Comprehensive Plan Is the plan equipped to provide linkage to this mitigation plan?	Yes	Yes	Yes

	Local Authority	Other Jurisdiction Authority	State Mandated
Comment: Washougal Municipal Code 2.48 can be revised to provide linkage, as well as the Comprehensive Plan			
Capital Improvement Plan What types of capital facilities does the plan address? How often is the plan updated? Comment: Transportation, Parks, Sewer, Water, Fire. As often as needed but usually amended annually.	Yes	No	Yes
Floodplain or Watershed Plan Comment: N/A	No	No	No
Stormwater Plan Comment: 2014 Stormwater Management Program (SWMP for the City of Washougal)	Yes	No	Yes
Habitat Conservation Plan Comment: N/A	No	No	No
Economic Development Plan Comment: The City is partners with the City of Camas and the Port of Camas/Washougal in our own economic development agency known as the Camas/Washougal Economic Development Association (CWEDA) and the City also contributes to the regional economic development agency known as the Columbia River Economic Development Council (CREDC).	Yes	Yes	Yes – dependent on funding
Shoreline Management Plan Comment: The City’s SMP is still being developed and reviewed with completion anticipated in 2016.	Yes	No	Yes
Community Wildfire Protection Plan Comment: N/A	No	No	No
Forest Management Plan Comment: N/A	No	No	No
Climate Action Plan Comment: N/A	No	No	No
Other Comment: N/A	No	No	No
Comprehensive Emergency Management Plan Comment: Washougal Municipal Code 2.48- Emergency Management adopted February 21, 2006.	Yes	No	Yes
Threat & Hazard Identification & Risk Assessment Comment: N/A	No	No	No
Post-Disaster Recovery Plan Comment: N/A	No	No	No
Continuity of Operations Plan Comment: N/A	No	No	No
Public Health Plan Comment: N/A	No	No	No

Table 8-2. 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	Yes (Water, Sewer and Stormwater)
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes (Local Improvement District) (LID)
Withhold Public Expenditures in Hazard-Prone Areas	No

Financial Resources	Accessible or Eligible to Use?
State-Sponsored Grant Programs	Yes (Department of Transportation (TIB); Washington Association of Sheriffs and Police Chiefs (WASPC); Department of Health; Recreation and Conservation Office; Department of Ecology; and Utilities & Transportation Commission)
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 8-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Development – Community Development Director and Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community Development – Building Official and Building Inspector Public Works – City Engineer and Engineering Inspector
Planners or engineers with an understanding of natural hazards	No	We would contract this out.
Staff with training in benefit/cost analysis	No	We would contract this out.
Surveyors	Yes	Contract support
Staff capable of making substantial damage estimates	No	We would contract this out.
Personnel skilled or trained in GIS applications	Yes	Community Development – Community Development Director and Planner
Scientist familiar with natural hazards in local area	No	We would contract this out.
Emergency manager	Yes	Camas / Washougal Fire Department and CRESA
Grant writers	Yes	Public Works – Senior Analyst and Parks Manager

Table 8-4. National Flood Insurance Program Compliance

Criteria	Response
When did the community enter the NFIP?	03/02/81
When did the Flood Insurance Rate maps become effective?	09/15/2012
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Community Development – Community Development Director (Mayor’s designee)
<ul style="list-style-type: none"> Is this a primary or auxiliary role? 	Auxiliary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	October 1, 2012
<ul style="list-style-type: none"> Does your floodplain management program meet or exceed minimum requirements? If so, in what ways? 	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	2012
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
<ul style="list-style-type: none"> If so, please state what they are. 	
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
<ul style="list-style-type: none"> If no, please state why. 	

Criteria	Response
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No, staff has utilized on-line training
• If so, what type of assistance/training is needed?	N/A
Does your jurisdiction participate in the Community Rating System (CRS)?	No
• If so, is your jurisdiction seeking to improve its CRS Classification?	N/A
• If not, is your jurisdiction interested in joining the CRS program?	Possibly
• How many Flood Insurance policies are in force in your jurisdiction? ^a	47
• What is the insurance in force? ^a	\$14,465,000
• What is the premium in force? ^a	\$37,692
• How many total loss claims have been filed in your jurisdiction? ^a	10
• How many claims were closed without payment/are still open? ^a	2
• What were the total payments for losses? ^a	\$71,369.59

a. According to FEMA records as of 11/30/2015.

Table 8-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	Dwelling – 2; Commercial – 2	8/2012
Public Protection	Yes	Dwelling – 5; Commercial – 5	7/2012
Storm Ready	No	N/A	N/A
Firewise	Yes (West End)	Firewise	2009

Table 8-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes – Daniel Layer, Finance Director
Do you have personnel skilled or trained in website development?	Yes – IT Manager, PC/Network Specialist and Social Media Specialist
Do you have hazard mitigation information available on your website?	No, but we could
• If yes, please briefly describe.	
Do you utilize social media for hazard mitigation education and outreach?	Yes
• If yes, please briefly describe.	We have recently utilized our website, Twitter feed and Facebook page to publicize this update to the Natural Hazard Mitigation Plan.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
• If yes, please briefly specify.	N/A
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
• If yes, please briefly describe.	Website, Twitter feed and Facebook page as well as a City maintained email list for subscribers.
Do you have any established warning systems for hazard events?	Yes
• If yes, please briefly describe.	We utilize our website, social media accounts and email subscribers list to notify the public of inclement weather or other possible hazards.

8.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the natural hazard mitigation plan into local planning mechanisms.

8.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan:

- City of Washougal Strategic Plan – “Public Safety” and “Emergency Preparedness” are identified within the “Core Services” pillar of the City’s Strategic Plan.
- Comprehensive Plan – The Plan addressed Critical Areas including Frequently Flooded Areas, Geologically Hazardous Areas, Wetlands, Habitat Conservation Areas and Critical Aquifer Recharge Areas. Development regulations for all of these critical areas have been adopted consistent with the Comprehensive Plan. These regulations incorporate the Best Available Science to protect these areas and if there are impacts then appropriate mitigation is required.

8.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan, but provide an opportunity for future integration:

- City of Washougal Strategic Plan – Public Safety is identified within the “Core Services” pillar of the City’s Strategic Plan. Within that pillar Public Safety has been identified and an indicator to monitor improvements in Public Safety is “Emergency Preparedness.” The Strategic Plan could be updated to reference the natural hazard mitigation plan and the natural hazard mitigation plan can be identified as a project showing progress towards Public Safety and adherence to the Strategic Plan.
- Comprehensive Plan – As part of an update reference to the natural hazard mitigation plan could be incorporated.
- Shoreline Management Plan – With the current update to Washougal’s SMP the goals, risk assessment and/or recommendations of the natural hazard mitigation plan could be incorporated.

8.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 8-7 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Flood	N/A	Oct. 2015	\$75-100K
Blizzard	1825	Dec. 2008	Undetermined
Severe Storm	1682	Dec. 2006	Undetermined
Severe Storm	1671	Nov. 2006	Undetermined
Earthquake	1361	Feb. 2001	Undetermined
Severe Storm	1159	Dec. 1996	Undetermined
Severe Storm	1079	Nov. 1995	Undetermined
Volcanic Eruption	623	May 1980	Undetermined
Severe Storm	137	Oct. 1962	Undetermined

8.6 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- Approximately 7.8 percent of structures in Washougal are located in dam inundation areas. Residents and property owners may not be aware of the risk because of the distance from the source of failure.
- Significant portions of the City are located in moderate to high liquefaction potential areas.
- Approximately 13 percent of structures in Washougal are located in Mt. Hood Distal hazard areas. Residents and property owners may not be aware that they are located in a volcano hazard area.
- There are 3 facilities reporting hazardous materials in the 100-year floodplain.
- There is an isolated area along the Washougal River located across from Hathaway Park that is known for flooding during heavy rain events. The City provides sand and sandbags for residents to help fortify their property.
- The City of Washougal only has one bridge crossing the Washougal River serving the residences to the north of town. There is an additional bridge on the west end of town but it is located in Camas.
- This City of Washougal has seven (7) at-grade railroad crossings and only one (1) railroad overpass over the Burlington Northern Railroad tracks. These tracks bisect the city and if they are congested or blocked there is only one way to evacuate the northern portion of the city (highest population area) and if the overpass is also compromised there is no way to evacuate this area to the south or for the area to the south to be evacuated to the north.

8.7 HAZARD RISK RANKING

Table 8-8 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe weather	33	High
2	Earthquake	32	High
3	Flood	18	Medium
3	Landslide	18	Medium
4	Volcano	15	Medium
5	Dam failure	8	Low
6	Wildfire	6	Low
7	Drought	1	Low

8.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 8-9 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this revision was prepared.

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
WS-1—Require the retrofitting of older, vulnerable or critical structures located on NEHRP ‘E’ and ‘F’ soils Comment: Staffing issue, lack of staff and funding		X	
WS-2—Through education and outreach support the retrofit of at-risk homes in subdivisions to prevent fire Comment: Staff merger and ongoing effort		X	
WS-3—Encourage the retrofit hazardous material containment areas. Comment: Lack of Staffing and a reduction in staffing		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
WS-4—Encourage non-structural retrofitting of hazardous materials containment. Comment: Lack of staffing		X	
WS-5—Educate residents as to the benefits of defensible space to minimize and reduce the impacts of fires Comment: Staff merger limited full implementation		X	
WS-6—Provide fast, accurate spatial incident information for emergency services response Comment: City uses County GIS service, cannot support local service level in this area			X
WS-7—Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy Comment lack of staff		X	
WS-8—Determine critical government communication functions and establish redundancy for these functions Comment: Police Department has completed this function, working with CRESA for 2023-2024 completion	X		
WS-9—Identify Tier II hazardous material facilities within Washougal and assess spill contingency plans and ensure adequate emergency services and response capabilities Comment: CRESA maintains Tier 2 reporting and MOU with VFD Hazmat provide adequate response	X		
WS-10—Continue to encourage partnerships among agencies to promote uniformity among no-burn policies Comment: Framework established to sustain efforts in the area.	X		
WS-11 Promote development off of the floodplain Comment: Framework established to sustain efforts in the area.	X		
WS-12—Consider adoption of a zero-rise floodway Comment: adopted no net rise policy in 2020	X		
WS-13—Institute low impact development practices Comment: Fully instituted in 2017-2018	X		
WS-14—Initiate a vegetation management program Comment: Noxious weed component added to property management plan in 2019	X		
WS-15—Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events. Comment: Ongoing effort. Required for new developments working into retrofit for older property		X	
WS-16—Continue to improve the priority routes throughout the city to a higher standard Comment: Ongoing effort. Required for new developments working into retrofit for older property		X	
WS-17—Ensure appropriate communication equipment is available during events Comment: Completed in PD, working the issue in joint service FD		X	
WS-18—Condition development in areas without adequate fire suppression to provide greater access. Comment: Updated fire codes, to include sprinklers, in all new developments	X		
WS-19—Seek opportunities to provide early warning of hazard events Comment: Ongoing		X	
WS-20—Where appropriate, support retro-fitting, purchasing or relocating structures located in high hazard areas and prioritize those structures that have experienced repetitive losses Comments: Lack of sustainable local funding, reduction in finance staffing, in addition to no significant repetitive losses is why this is no longer feasible.			X
WS-21—Integrate the natural hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community	X		

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Comments: Completed in last comprehensive plan update in 2016/2017			
WS-22—Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP: Comments: Ongoing effort		X	

8.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 8-10 lists the actions that make up the City of Washougal hazard mitigation action plan. Table 8-11 identifies the priority for each action. Table 8-12 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	
WS-1—Require the retrofitting of older, vulnerable or critical structures located on NEHRP ‘E’ and ‘F’ soils	Existing	Earthquakes	1, 2, 4, 7, 9, 12	Community Development	High	HMGP, PDM, FMA, Owner’s Expense	Long-term
WS-2—Through education and outreach support the retrofit of at-risk homes in subdivisions to prevent fire	Existing	Wildland Fires	1, 2, 4, 7, 9, 12	Community Development / C-W Fire	High	HMGP, PDM, Owner’s Expense	Ongoing
WS-3—Encourage the retrofit hazardous material containment areas.	Existing	Earthquakes	1, 2, 4, 5, 12	Community Development / C-W Fire	High	HMGP, Owner’s Expense	Ongoing
WS-4—Encourage non-structural retrofitting of hazardous materials containment.	Existing	Earthquakes	1, 2, 4, 5, 7, 12	Community Development / C-W Fire	Medium	HMGP, PDM, Owner’s Expense	Ongoing
WS-5—Educate residents as to the benefits of defensible space to minimize and reduce the impacts of fires.	New and Existing	Wildland Fires	1, 2, 4, 7, 9, 12	C-W Fire	Medium	HMGP, PDM, General Fund	Ongoing
WS-6—Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy	New and Existing	New and Existing	New and Existing	New and Existing	New and Existing	New and Existing	New and Existing
WS-7—Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.	New and Existing	All Hazards	1, 2, 3, 4, 8, 12	Community Development / Public Works / Washougal PD / C-W Fire	High	General Fund	Ongoing
WS-8—Continue to improve the priority routes throughout the city to a higher standard.	New and Existing	All Hazards	2, 3, 4, 5, 8, 10, 12	Community Development / Public Works / Washougal PD / C-W Fire	High	HMGP, PDM, State Grants, General Fund	Long-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
WS-9—Ensure appropriate communication equipment is available during events.						
New and Existing	All Hazards	1, 2, 4, 6, 8, 12	Community Development / Public Works / Washougal PD / C-W Fire	High	General Fund	Ongoing
WS-10—Seek opportunities to provide early warning of hazard events						
New	All Hazards	1, 2, 3, 4, 12	Community Development / Public Works / Washougal PD / C-W Fire	Medium	Possibly HMGP, General Fund	Ongoing
WS-11—Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP). This will be accomplished through the implementation of floodplain management programs that will, at a minimum, meet the requirements of the NFIP:						
New and Existing	Flood	1, 2, 4, 5, 6, 9, 11, 12	Community Development	Low	General Fund	Ongoing

Table 8-11. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
WS-1	6	High	High	Yes	Yes	No	Medium	High
WS-2	6	Medium	High	No	Yes	No	Low	Medium
WS-3	5	Medium	High	No	Yes	No	Low	Medium
WS-4	6	Low	Medium	No	Yes	No	Low	Medium
WS-5	6	Low	Medium	No	Yes	No	High	Medium
WS-6	4	Medium	Medium	Yes	Yes	No	Medium	Medium
WS-7	6	High	High	Yes	No	No	Low	Low
WS-8	7	Medium	High	No	Yes	No	Low	Medium
WS-9	6	Medium	High	No	No	No	Low	Low
WS-10	5	High	Medium	Yes	Maybe	No	Medium	Medium
WS-11	8	High	Low	Yes	No	Yes	Medium	Low

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

Table 8-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	WS-7, WS-10	WS-7, WS-10	WS-10		WS-7, WS-10	WS-15
Earthquake	WS-1, WS-3, WS-4; WS-6,	WS-1, WS-3, WS-4, WS-6,	WS-1, WS-3, WS-4, WS-10		WS-6, WS-7, WS-8, WS-9, WS-10	WS-1, WS-3,

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Landslide	WS-7, WS-8, WS-10	WS-7, WS-8, WS-9, WS-10	WS-10	WS-7	WS-7, WS-8, WS-9, WS-10	
Flood	WS-7, WS-8, WS-10, WS-11	WS-7, WS-8, WS-9, WS-10, WS-11	WS-10, WS-11	WS-10	WS-7, WS-8, WS-9, WS-10	
Severe Weather	WS-7, WS-8, WS-10	WS-7, WS-8, WS-9, WS-10	WS-10,		WS-7, WS-8, WS-9, WS-10	
Volcano	WS-7, WS-8, WS-10,	WS-7, WS-8, WS-9, WS-10,	WS-10,		WS-7, WS-8, WS-9, WS-10	WS-15
Wildland Fire	WS-2, WS-5, WS-7, WS-8, WS-10	WS-2, WS-5, WS-7, WS-8, WS-9, WS-10	WS-2, WS-5, ,WS-10,	WS-5,	WS-7, WS-8, WS-9, WS-10	WS-2,

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

9. BATTLE GROUND PUBLIC SCHOOLS

9.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Tom Adams, Director of Student Services
PO Box 200
Battle Ground, WA 98604
Telephone: 360-885-5415
e-mail Address: adams.tom@battlegroundps.org

Alternate Point of Contact

Cheri Dailey, Director of Risk Management and
Business Operations
PO Box 200
Battle Ground, WA 98604
Telephone: 360-885-5381
e-mail Address: dailey.cheri@battlegroundps.org

9.2 JURISDICTION PROFILE

9.2.1 Overview

Battle Ground Public Schools is a public K-12 school district in northeast Clark County, Washington, and has 18 schools spread over 273 square miles. It stretches from the lowlands of suburban Vancouver on the west, near the confluence of Interstate 5 and Interstate 205, to the Cascade Mountains at the Clark-Skamania county line on the east. Mount St. Helens is just 10 miles outside of the district's northeast boundary. The district serves populations within portions of Clark County, the City of Battle Ground and the City of Vancouver. A five member elected board of directors governs the district. Battle Ground Public Schools Board of Directors assumes responsibility for the adoption of this plan; the Director of Student Services and the Executive Director of Facilities will oversee its implementation.

The district was established in 1909 and serves approximately 12,000 students and employs 1,602 staff. The school district is funded by the state as well as local levies.

9.2.2 Service Area and Trends

Approximately 78,081 people reside within the district's service area. The district serves a population of 12,000 students. Its service area covers an area of 273 square miles, which has a total replacement value of \$814,705,640 for district assets and \$13.7 billion for overall structure value.

The district has been reviewing building needs to accommodate increases in population but no decisions have been made at this time as to location. We have seen a great deal of new housing starts and apartment construction in the south of our district and expect increases in enrollment.

9.2.3 Assets

Table 9-1 summarizes the critical assets of the district and their value.

Table 9-1. Special Purpose District Assets

Asset	Value
Property	
563 acres	\$32.4 million
Critical Facilities	
Amboy Middle School (6 facilities)	\$40,602,000
Battle Ground High School (22 facilities)	\$150,518,500
Captain Strong Elementary School (7 facilities)	\$39,270,200
Center For Ag Science & Environ. Ed (10 facilities)	\$23,436,540
Chief Middle School	\$38,815,000
Daybreak Campus (5 facilities)	\$62,570,000
Dodge House	\$877,000
Glenwood Heights Primary (9 facilities)	\$31,706,420
Homelink-CAM	\$10,500,000
Laurin Middle (9 facilities)	\$31,334,280
Lewisville Non School (6 facilities)	\$26,078,320
Maple Grove Primary (3 facilities)	\$31,865,120
River Home Link (8 facilities)	\$34,130,160
Pleasant Valley Campus (8 facilities)	\$51,423,860
Prairie High School (20 facilities)	\$105,728,240
Tukes Valley Campus (5 facilities)	\$62,570,000
Yacolt Primary (10 facilities)	\$40,880,000
Total:	\$814,705,640

9.3 Planning and regulatory Capabilities

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

- BGPS Board of Directors Policies
 - Long Range Facility Plan
 - Board of Directors Strategic Plan
 - Capital Facilities Plan
- Clark County Codes
- City of Battle Ground Codes
- City of Vancouver Codes
- City of Yacolt Codes.

9.4 Fiscal, ADMINISTRATIVE and TECHNICAL Capabilities

An assessment of fiscal capabilities is presented in Table 9-2. An assessment of administrative and technical capabilities is presented in Table 9-3.

Table 9-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	NA
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes - Impact Fees
Other	NA

Table 9-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Operations Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Operations Department
Planners or engineers with an understanding of natural hazards	Yes	Operations Department
Staff with training in benefit/cost analysis	Yes	Business Services
Surveyors	No	NA
Personnel skilled or trained in GIS applications	Yes	Facilities Department
Scientist familiar with natural hazards in local area	No	NA
Emergency manager	Yes	Business Services/HR
Grant writers	No	NA
Other	No	NA

9.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 9-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	No
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	No

Criteria	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes Blackboard Connect, FlashAlert, District information line
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	Yes Blackboard Connect, FlashAlert, District information line

9.6 Integration with Other Planning Initiatives

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into existing plans and programs.

9.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- None identified at this time.

9.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Long Range Facility Plan
- Board of Directors Strategic Plan
- Capital Facilities Plan

9.7 Jurisdiction-Specific Natural Hazard Event History

Table 9-5 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Washington Covid-19 Pandemic	DR-4481	March 22, 2020	NA
Severe Winter Storm, Straight Line Winds, Flooding, Landslides, Mudslides and a Tornado	DR-4253	December 1, 2015	NA
Severe Winter Storm and Record and Near Record Snow	DR-1825	December 12, 2008	NA

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm, Landslides, and Mudslides	DR-1682	December 14, 2006	NA
Severe Winter Storms, Flooding	DR-1159	December 26, 1996	NA
Volcanic Eruption, Mount St. Helens	DR-623	May 21, 1980	NA
Dole Valley Fire	NA	1929	NA
Yacolt Burn	NA	1903	\$13,000,000

9.8 Jurisdiction-Specific Vulnerabilities

Noted vulnerabilities the jurisdiction include:

- Older facilities may not have been built to modern seismic standards.

9.9 Hazard Risk Ranking

Table 9-6 presents the ranking of the hazards of concern.

Table 9-6. Hazard Risk Ranking			
Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	18	Medium
2	Earthquake	16	Medium
3	Landslide	15	Medium
4	Wildfire	7	Low
5	Volcano	3	Low
6	Flood	2	Low
7	Dam Failure	0	None
7	Dan Failure	0	None

9.10 Status of Previous Plan Initiatives

Table 9-7 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table were developed in 2016.

Table 9-7. Status of Previous Plan Initiatives			
Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Follow all federal, state, local, Office of Superintendent of Public Instruction (OSPI) applicable building standards		x	
<i>Comment:</i>			
Review OSPI Hazard Mitigation Plan goals and objectives	x		
<i>Comment:</i>			
Actively participate in plan maintenance outlined in volume 1 of the hazard mitigation plan		x	
<i>Comment:</i>			

Review potential risk for natural disasters on land purchases	x		
Comment:			
Share the hazard mitigation plan with the school board in a public meeting		x	
Comment:			
Work with local agencies (ESD112, CRESA, Local Fire and Law Enforcement) on reunification site	x		
Comment: Emergency Operations Plan Revised August 2021			
Complete state OSPI School Facilities Study and Survey for facilities review. Study addresses overall analysis of the school districts' facilities, educational programs and plans, student population projections, capital finance and operating capabilities and identification of needs for new construction, modernization or replacement of facilities.	x		
Comment:			
Ensure emergency communication systems functioning (Automated calling, district network and phone systems, e911 identification, district radio systems)	x		
Comment:			
Integrate the hazard mitigation plan into other plans and programs that support infrastructure investments choices, such as the capital improvement program.		x	
Comment: Currently updating Capital Facilities Plan			
Store emergency supplies and emergency water supply for students and staff at school for at least one day	x		
Comment: Each site is responsible for storing emergency supplies			
Where possible, support construction and retrofitting of vulnerable facilities			x
Comment: Per Executive Director of Facilities - retrofitting is too expensive, we try to replace building instead.			
Designate snow routes with transportation contractor to ensure student safety	x		
Comment:			
Install and maintain surge protection on critical electronic equipment	x		
Comment:			

9.11 Hazard Mitigation Action Plan and Evaluation of Recommended Actions

Table 9-7 lists the actions that make up the battle ground public schools hazard mitigation action plan. Table 9-8 identifies the priority for each action. Table 9-9 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 9-8. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
BGPS-1—Follow all federal, state, local, Office of Superintendent of Public Instruction (OSPI) applicable building standards						
New	All hazards	4, 5, 10, 11, 12	BGPS Facilities	Low	General Fund, Levy	Ongoing
BGPS-2—Review OSPI Hazard Mitigation Plan goals and objectives						
NA	All hazards	4, 5, 10, 11, 12	BGPS Facilities	Low	General Fund, Levy	Short-term
BGPS-3—Actively participate in plan maintenance outlined in volume 1 of the hazard mitigation plan						
New and existing	All hazards	1, 4	BGPS Facilities	Low	General Fund, Levy	Ongoing
BGPS-4—Review potential risk for natural disasters on land purchases						
New	All hazards	4, 5, 10, 11, 12	BGPS	Low	General Fund, Levy	Short-term
BGPS-5—Share the hazard mitigation plan with the school board in a public meeting						
NA	All hazards	1, 4	BGPS	Low	General Fund, Levy	Ongoing
BGPS-6—Work with local agencies (ESD112, CRESA, Local Fire and Law Enforcement) on reunification site						
New and existing	All hazards	2, 4	BGPS	Low	General Fund, Levy	Short-term
BGPS-7—Complete state OSPI School Facilities Study and Survey for facilities review. Study addresses overall analysis of the school districts' facilities, educational programs and plans, student population projections, capital finance and operating capabilities and identification of needs for new construction, modernization or replacement of facilities.						
New and existing	All hazards	4, 5, 10, 11, 12	BGPS	Low	General Fund, Levy	Short-term
BGPS-8—Ensure emergency communication systems functioning (Automated calling, district network and phone systems, e911 identification, district radio systems)						
New and existing	All hazards	3	BGPS	Low	General Fund, Levy	Short-term
BGPS-9—Integrate the hazard mitigation plan into other plans and programs that support infrastructure investment choices, such as the capital improvement program.						
New and existing	All hazards	5, 6	BGPS	Low	General Fund, Levy	Short-term
BGPS-10—Store emergency supplies and emergency water supply for students and staff at school for at least one day						
New and existing	All hazards	2, 5	BGPS	Low	General Fund, Levy	Short-term
BGPS-11—Where possible, support construction and retrofitting of vulnerable facilities						
Existing	Earthquake	4, 5, 10, 11, 12	BGPS	High	General Fund, Levy, HMGP, PDM	Long-term
BGPS-12—Designate snow routes with transportation contractor to ensure student safety						
NA	Severe weather	4, 5, 6, 8, 12	BGPS	Low	General Fund, Levy	Short-term
BGPS-13—Install and maintain surge protection on critical electronic equipment						
New and existing	Severe weather	5, 8, 10	BGPS	Low	General Fund, Levy	Short-term

Table 9-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
BGPS-13	3	Medium	Low	Yes	No	Yes	High	Low

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

Table 9-10. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Drought	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Earthquake	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7, BGPS-11	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Flood	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Landslide	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Severe weather	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7, BGPS-13	BGPS-5		BGPS-6, BGPS-8, BGPS-10, BGPS-12	
Volcano	BGPS-2, BGPS-3, BGPS-4, BGPS-9	BGPS-1, BGPS-4, BGPS-7	BGPS-5		BGPS-6, BGPS-8, BGPS-10	
Wildfire	BGPS-2, BGPS-3, BGPS-9	BGPS-1	BGPS-5		BGPS-6, BGPS-8, BGPS-10	

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

10. CLARK COUNTY PUBLIC UTILITIES DISTRICT #1

10.1 NATURAL HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Dan Krebs, Director of Operations
PO Box 8900
Vancouver, WA 98668
Telephone: 360-992-8870
e-mail Address: dkrebs@clarkpud.com

Alternate Point of Contact

Crystal Jones, Emergency and Environmental
Coordinator
PO Box 8900
Vancouver, WA 98668
Telephone: 360-992-8894
e-mail Address: cjones@clarkpud.com

10.2 JURISDICTION PROFILE

10.2.1 Overview

Clark Public Utilities (Utility) is a customer-owned utility providing electric and water service in Clark County, Washington. A municipal corporation organized under the laws of the state of Washington, the Utility was formed by a vote of the people in 1938 and currently provides electric service to more than 192,000 customers and water service to more than 31,000 homes and businesses. The Utility currently has 370 employees. A three-member board of commissioners is elected by the citizens of Clark County to set policy for the utility. The Board of Commissioners assumes responsibility for the adoption of this plan. The General Manager/CEO will oversee its implementation.

The Utility electric service area includes all of Clark County which is located in the Southwestern region of Washington State. The Columbia River forms its southern and western borders; it is bounded on the north by the Lewis River and on the east by Skamania County.

The water Utility service area covers about 200 square miles and includes the communities of Hazel Dell, Salmon Creek, Lakeshore, Felida, Mt. Vista, La Center, Brush Prairie, Hockinson, Venersborg, Heisson, Meadow Glade, Dollars Corner, Duluth, Pioneer, Manor, Amboy and Yacolt. In addition, we operate several small “satellite” systems for small groups of homes throughout the county.

The utility is funded by revenues from rates charged for the retail sale of electricity and water. When available we also sell surplus electricity and water that can increase revenue. These rates are set by the three elected Board of Commissioners.

10.2.2 Service Area and Trends

The Utility serves a population of 445,000. Its service area covers an area of 630 square miles. Between 2010 and 2014 the utility has experienced customer growth of approximately 6 percent. The Utility expects continued customer growth at the current rate based on current economic trends. The Utility continues to implement cost

reductions that have resulted in stable electric and water rates for several years. The estimated replacement value of structures in the Utility’s electric and water service territory is approximately \$91 billion.

10.2.3 Assets

Table 10-1 summarizes the critical assets of the district and their value.

Table 10-1. Special Purpose District Assets	
Asset	Value
Property	
220 acres of land	\$100,000,000
Critical Infrastructure and Equipment	
Electric system transmission, substations and plant	\$98,000,000
Electrical system distribution overhead and underground	\$643,000,000
Electrical generating system, plant, transmission, distribution and structures	\$257,500,000
Water system wells, pumping and treatment	\$30,000,000
Water system transmission, distribution and plant	\$150,000,000
Total:	\$1,178,500,000
Critical Facilities	
Electric Center building	\$9,800,000
Operations Center buildings	\$34,650,000
River Road Generating facility	\$163,000,000
Carol Curtis Well field	\$5,870,000
Bridge Substation office	\$550,000
Total:	\$266,700,000

10.3 CAPABILITY ASSESSMENT

10.3.1 Planning and Regulatory Capabilities

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

- National Electrical Safety Code
- National Environmental Protection Act
- Federal Endangered Species Act
- Washington State Building Code
- The District must adhere to all applicable codes and regulations enforced by federal, state and local authorities.

10.3.2 Fiscal, Administrative and Technical Capabilities

An assessment of fiscal capabilities is presented in Table 10-2. An assessment of administrative and technical capabilities is presented in Table 10-3.

10.3.3 Education and Outreach Capabilities

An assessment of education and outreach capabilities is presented in Table 10-4.

Table 10-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 10-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	No	
Engineers or professionals trained in building or infrastructure construction practices	Yes	Greg Pagel, Facilities Manager Eric Beck, Engineering Manager Water
Planners or engineers with an understanding of natural hazards	No	
Staff with training in benefit/cost analysis	No	
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Mike Pratka, Manager GIS/CAD Services
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Dan Krebs, Director of Operations
Grant writers	No	
Other	No	

Table 10-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes, Erica Erland, Corporate Communications Manager
Do you have personnel skilled or trained in website development?	Yes, but we contract with a private company, Corporate Media
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes On our Outage Page we have emergency preparedness links to FEMA, Red Cross, etc.
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	Yes As noted in the previous response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes We can include inserts in our customer's utility bills that cover hazard mitigation topics.
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	No

10.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction's process for integrating the natural hazard mitigation plan into existing plans and programs.

10.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan:

- Annual Capital Improvement Budget: When reviewing projects consideration is given during the design process if the project is in a known flood area or landslide area. This risk assessment is used by both the Water and Electric Departments. Over the years some capital projects are budgeted for the following year to improve our electrical system based on a natural disaster that occurred in the previous fiscal budget year.

10.4.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the natural hazard mitigation plan, but provide an opportunity for future integration:

- Develop a strategic plan to identify high impact facilities such as substations and water reservoirs in need of seismic retrofits.

10.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 10-5 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe weather	4249	12/8/2015	200,000
Severe weather	NA	12/11/2014	1,200,000
Severe weather	NA	11/11/2014	\$425,000
Severe weather	1671	12/12/2006	1,100,000
Severe weather	NA	01/06/2004	1,600,000
Severe weather	NA	12/26/1996	1,400,000
Severe weather	NA	12/12/1995	1,800,000
Severe weather	137	10/20/1962	unknown

10.6 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities of the jurisdiction include the following:

- Substations and switching stations
- Water reservoirs
- River Road generating plant

10.7 HAZARD RISK RANKING

Table 10-6 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	54	High

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
2	Severe Storm	54	High
3	Flood	45	High
4	Volcano	16	Medium
5	Dam Failure	11	Low
6	Landslide	8	Low
7	Wildfire	8	Medium
8	Drought	5	Low

10.8 Status of Previous Plan Initiatives

Table 10-7 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table were developed in 2016.

Table 10-7. Status of Previous Plan Initiatives			
Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Educate customers in outage prone areas by providing informational pamphlets with mailed bills.		x	
Comment:			
Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.	x		
Comment: We build to NESC Heavy Loading for distribution and transmission lines even though we are in a Medium Loading			
Consider, where appropriate, the adoption of higher construction standards for building substations, transmission lines and distribution lines that will result in an increase in resilience for new infrastructure	x		
Comment: We have high reliability numbers.			
Consider, purchasing mobile back-up generators to be used to serve critical infrastructure including, water, and sewer treatment and distribution facilities owned by CPU and others.		x	
Comment: We've added some generator capacity and are determining the requirements for a new mobile generator. I'd probably list this as on-going and continuous as we'll need to keep on top of replacements on a regular basis. We're also looking at developing agreements and relationships with local rental companies to supply generators on an as needed basis.			
Consider upgrading lines and poles to improve wind/ice loading, undergrounding critical lines, and adding additional interconnection switches to allow alternate feed paths.		x	
Comment: Ongoing process			
Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.		x	
Comment: Clark PUD is involved in updating the plan every 5 years.			

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

Table 10-10. Analysis of Mitigation Actions

Earthquake	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Severe Storm	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Flood	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Volcano	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Dam Failure	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Landslide	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Wildfire	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3
Drought	Ex-1, Ex-2, Ex-3, Ex-4, Ex-5	Ex-1	Ex-2	Ex-3

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

10.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

This is the first time the Utility has participated in the updating of the Clark Regional Natural Hazard Mitigation Plan and development of this annex. Staff resources needed to complete this process was limited and gathering the needed information required assistance from many different departments. Future updates would include additional personnel to perform a more comprehensive risk assessment and identification of potential hazard risk mitigation projects.

CPU will develop a utility wide working group to monitor progress of proposed mitigation efforts as well as identifying future projects for hazard mitigation.

11. CLARK REGIONAL WASTEWATER DISTRICT

11.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Shawn Moore
Business Services Director
8000 NE 52nd Ct.
Vancouver WA 98685
Telephone: (360) 993-8849
e-mail Address: smoore@crwwd.com

Alternate Point of Contact

Heath Henderson
Engineering Director
8000 NE 52nd Ct.
Vancouver WA 98685
Telephone: (360) 993-8815
e-mail Address: hhenderson@crwwd.com

11.2 Jurisdiction Profile

11.2.1 Overview

The Clark Regional Wastewater District (District) is a special-purpose district organized under Title 57 RCW. It was formed in 1958 to provide urban wastewater services for unincorporated Clark County. The District has more than 80 full-time staff and is governed by a three-member elected Board of Commissioners (Board). The District is funded through rates and connection charges. The District provides service to roughly 100,000 people, mostly residential. In addition to the unincorporated areas of Clark County (City of Vancouver urban growth area), the District's service area includes the City of Ridgefield, portions of the Cities of Battle Ground and Vancouver and the rural centers of Meadow Glade and Hockinson. The Board is responsible for the adoption of the plan which will be implemented under the supervision of the General Manager.

11.2.2 Service Area and Trends

The District serves a population of over 100,000 across a service area that covers more than 50 square miles. The total replacement value of all structures located in the service area is estimated at \$20 billion dollars.

The District is expecting an average growth rate of over 3% for the next 20 years. Residential growth rates (sewer access population) in the District over the last 5, 10, and 20 years have averaged 4.5%.

The Clark Regional Wastewater District is a member of the Discovery Clean Water Alliance, which was legally formed on January 4, 2013, under the Joint Municipal Utility Services Act (RCW 39.106). The Alliance serves four Member agencies – the City of Battle Ground, Clark County, Clark Regional Wastewater District and the City of Ridgefield. The Alliance Members jointly own and jointly manage regional wastewater assets under Alliance ownership. The Alliance seeks to optimize the long-term framework for delivery of regional wastewater transmission and treatment services to the urban growth areas in the central portion of Clark County, Washington. The District is the official 'Administrative Lead' agency for the Alliance. Responsibilities include executive, administrative, financial, operations and engineering functions.

11.2.3 Assets

Table 11-1 summarizes the critical assets of the district and their value.

Table 11-1. Special Purpose District Assets

Property	
8.5 acres of land	\$2,100,000
28 acres of land ^a	\$6,000,000
Critical Infrastructure and Equipment	
730 miles of pipe	\$68,000,000
74 pump stations	\$30,000,000
877 STEP Systems	\$4,000,000
6 portable generators	\$150,000
4 portable pumps	\$210,000
28 District vehicles	\$2,100,000
36th Ave. Pump Station ^a	\$11,000,000
117th St. Pump Station ^a	\$20,000,000
22 miles of force main and interceptors ^a	\$39,000,000
Total:	\$282,460,000
Critical Facilities	
District Operations Center	\$16,000,000
Salmon Creek Treatment Plant ^a	\$175,000,000
Ridgefield Treatment Plant ^a	\$8,000,000
Total:	\$199,000,000
Discovery Clean Water Alliance assets under management by District.	

11.3 Planning and regulatory Capabilities

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

- Policy 037 Comprehensive Emergency Response Plan Rev 08/01/19 Adopted
- Comprehensive General Sewer Plan adopted 01/22/2019
- 2022-2027 Capital Improvement Program adopted 12/28/2021
- District Code 2.36 Declaration of Emergency
- District Code 2.28 Contracts for Architectural and Engineering Services
- District Code 2.32 Small Works Roster and Vendor Lists
- District Code 2.34 Purchase of Materials, Supplies and Equipment – Competitive Bidding and Vendor Rosters
- Resolution 1586 – Joint Standards for Management, Operations and Maintenance of Wastewater Collection Systems adopted May 28, 2013

11.4 Fiscal, ADMINISTRATIVE and TECHNICAL Capabilities

An assessment of fiscal capabilities is presented in Table 11-2. An assessment of administrative and technical capabilities is presented in Table 11-3.

Table 11-2. Fiscal Capability	
Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes

Financial Resources	Accessible or Eligible to Use?
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs (Community Economic Revitalization Board)	Yes
Development Impact Fees for Homebuyers or Developers	Yes (SDCs)
Other	No

Table 11-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering: District Engineer, Development Program Manager Administration: Business Services Director
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering: District Engineer, Principal Engineer, Senior Project Manager Administration: General Manager and Business Services Director Operations: Operations Manager
Planners or engineers with an understanding of natural hazards	No	
Staff with training in benefit/cost analysis	Yes	Engineering: District Engineer, Principal Engineer, Senior Project Manager Finance: Finance Director, Fiscal Manager and Accounting Manager Administration: General Manager and Business Services Director
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Engineering: Senior GIS Specialist
Scientist familiar with natural hazards in local area	No	
Emergency manager	No	
Grant writers	No	
Other	Yes	Pretreatment Coordinator

11.5 Education and Outreach Capabilities

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 11-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes (General Manager and Business Services Director)
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? If yes, please briefly describe.	No
Do you utilize social media for hazard mitigation education and outreach? If yes, please briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, please briefly describe.	Yes Website, Monthly Newsletter & IVR System
Do you have any established warning systems for hazard events?	No

Criteria	Response
If yes, please briefly describe.	

11.6 Integration with Other Planning Initiatives

The following describe the jurisdiction's process for integrating the hazard mitigation plan into existing plans and programs.

11.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- Comprehensive General Sewer Plan

11.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Strategic Plan - The District Strategic Plan is updated every 4-5 years of after a significant event. Current and short-term organizational goals are, however, reviewed and updated on an annual basis. Enterprise Resiliency is one of the attributes of the plan framework.
- Comprehensive Emergency Response Plan - The Emergency Response Plan has an annex which outlines the risks associated with Clark County. This annex would be updated along with any more specific risk assessments and mitigation plans.
- Comprehensive General Sewer Plan - The GSP is updated on a six-year basis to include proposed infrastructure requirements by basin. Hazard mapping was incorporated into the Plan with the 2017 update and considered in development of the long-range infrastructure plans therein. Risks and mitigation strategies associated with future infrastructure planning can be further incorporated with future updates.

11.7 Jurisdiction-Specific Natural Hazard Event History

Table 11-5 lists all past occurrences of natural hazards within the jurisdiction.

Table 11-5. Natural Hazard Events			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	4253	2015	\$300,000 District mainline pipe next to a small stream was broken by the stream swollen by rain going outside of its stream bed and scouring the land that contained the pipe.
Severe Winter Storm	1825	2009	No impact on infrastructure but did impact the electrical utility requiring portable generators to be sent to pump stations until the electrical grid was restored.
Severe Winter Storm	1682	2007	No impact on infrastructure but did impact the electrical utility requiring portable generators to be sent to pump stations until the electrical grid was restored.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	1671	2006	No impact on infrastructure but did impact the electrical utility requiring portable generators to be sent to pump stations until the electrical grid was restored.
Earthquake	1361	2001	No impact on infrastructure.
Flood	1100	1996	Impact on key pump station requiring emergency pumping, sandbagging and pump around. County built a flood wall that can withstand a 500 year flood.
Volcano	623	1980	No impact on infrastructure.

11.8 Jurisdiction-Specific Vulnerabilities

Noted vulnerabilities the jurisdiction includes:

- Access to 74 pump stations and two (2) treatment plants when roads are closed due to winter storms, flooding or a potential large earthquake impacting roads and access with fallen trees and power lines.
- Localized large-scale flooding where new pump stations have been added as backbone infrastructure is added to the District.
- Large-scale flooding in the Columbia which can impact the treatment plant's ability to send treated effluent into the Columbia.
- Provision of electricity to District pump stations during widespread power outages and access to emergency fuel supplies for redundant power systems (e.g. generators) at pump stations and treatment plants.

11.9 Hazard Risk Ranking

Table 11-6 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe weather	45	High
2	Earthquake	36	High
3	Flood	11	Medium
3	Volcano	11	Medium
4	Landslide	8	Low
5	Wildfire	0	None
5	Drought	0	None
5	Dam Failure	0	None

11.10 Status of Previous Plan Initiatives

Table 11-7 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table were developed in 2016.

Table 11-7. Status of Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Review all critical assets that show probability of extensive damage for the Cascadia event over 2% and probability of extensive damage over 5% for the 500 year earthquake.		X	
comments:			
Define retrofit requirements, redundancy strategy and costs to meet current code and mitigate probability of extensive damage. Determine policy and capital programming strategy by executives.		X	
comments:			
Define response policy and procedures in the event of a large-scale event and significant impact on the asset(s) for operations staff decisions.		X	
comments:			
Review all infrastructure defined as being impacted by the 500 year flood. Define impact, on system, emergency response strategy, time to bring back on line.		X	
comments:			
Evaluate and establish relocation and protection measures alternatives for infrastructure potentially impacted by the 500 year flood event.		X	
comments:			
Define expected cost estimate to bring system back online after flood event. Define capital costs strategy and requirements for policy decisions and capital improvements planning.		X	
comments:			
Define response policy and procedures in the event of a large-scale event and significant impact on the asset(s) for operations staff decisions.		X	
comments:			
Review all infrastructure that has a single access point and the potential for reduced or eliminated access on roads in a severe weather event.		X	
comments:			
Define alternate strategy cost estimates for capital programming for mitigation of single access to key infrastructure and the placement of redundant energy supply (generator and fuel).		X	
comments:			
Define response policy and procedures in the event of a large-scale event and significant impact to multiple assets.		X	
comments:			

Evaluate District customer communication measures, equipment and capabilities.		X	
comments:			
Where appropriate, acquire system/equipment to communicate hazard mitigation, disaster preparedness, response and recovery information with customers.		X	
comments:			
Evaluate redundant power capabilities and operating procedures.		X	
comments:			
Where appropriate, implement/purchase measures to increase capabilities. Including emergency fuel storage, onsite generators, etc.		X	
comments:			
Evaluate critical facilities and identify failure modes, locations and energy capacity.		X	
comments:			
Review all assets that are listed in landslide potential zones and determine impact to system.		X	
comments:			
Define strategy on short-term emergency response and cost as well as long term mitigation strategy and capital impact including retro fitting where applicable.		X	
Comments:			
Investigate potential impact on treatment plants for conveyance flows to contain additional sediment from a volcano and direct ash flow into uncovered treatment infrastructure.		X	
comments:			
Define strategy for short term response and mitigation to include long term mitigation capital plan.		X	
comments:			
Review District code for all new infrastructure(s) to include hazard review for Earthquake, Flood, Severe Winter Events and Landslide impacts. Require capability investment to mitigate large scale events where feasible including redundancy, additional equipment on site and in inventory. Define average length of time to order equipment and install in the analysis.		X	
comments:			
Integrate current assessment and mitigation strategies into the District's Strategic Plan and Emergency Plan.		X	
comments:			

Develop a post disaster recovery plan and procedures and incorporate into Emergency Plan.		X	
comments:			
Support county-wide initiatives, where appropriate, identified in HMP.		X	
comments:			
Actively, participate in plan maintenance protocols, where appropriate, identified in HMP.		X	
comments:			
Evaluate impacts of climate change on District operations and facilities.		X	
comments:			
Adopt climate change policy and implement, where appropriate, changes in District procedures, planning documents and operations.		X	
comments:			
Define and develop ratepayer education on impact of a natural disaster on District infrastructure. Include what they can do to minimize impact until infrastructure is back on line.		X	
comments:			
Capture data after each hazard event to include impact, cost, and additional effort to support analysis for future mitigation efforts and update the hazard mitigation plan.		X	
comments:			
Evaluate and implement measures to increase emergency capacity for emergency management, operational capability and continuity of business.		X	
comments:			

11.11 Hazard Mitigation Action Plan and Evaluation of Recommended Actions

Table 11-8 lists the actions that make up the Clark Regional Wastewater District hazard mitigation action plan. Table 11-9 identifies the priority for each action. Table 11-10 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 11-8. Hazard Mitigation Action Plan Matrix						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
CRWWD-1 - Review all critical assets that show probability of extensive damage for the Cascadia event over 2% and probability of extensive damage over 5% for the 500 year earthquake.	Existing Earthquake	5,10,12	Engineering	Low	Staff time	Short term
CRWWD-2 - Define retrofit requirements, redundancy strategy and costs to meet current code and mitigate probability of extensive damage. Determine policy and capital programing strategy by executives.						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Existing	Earthquake	2,8,9	Senior Mgt. and BOC	High	Staff time	Long term
CRWWD-3 - Define response policy and procedures in the event of a large-scale event and significant impact on the asset(s) for operations staff decisions.						
Existing	Earthquake	6	Operations	Low	Staff time	On-going
CRWWD-4 - Review all infrastructure defined as being impacted by the 500 year flood. Define impact, on system, emergency response strategy, time to bring back on line.						
Existing	Flood	5,10,12	Operations	Low	Staff time	Short term
CRWWD-5 - Evaluate and establish relocation and protection measures alternatives for infrastructure potentially impacted by the 500 year flood event.						
Existing	Flood	5,9,10	Engineering	Low	Staff time	Short term
CRWWD-6 - Define expected cost estimate to bring system back online after flood event. Define capital costs strategy and requirements for policy decisions and capital improvements planning.						
New and Existing	Flood	2,8,9	Engineering	High	Staff time	Long term
CRWWD-7 - Define response policy and procedures in the event of a large-scale event and significant impact on the asset(s) for operations staff decisions.						
Existing	Flood	6	Operations	Low	Staff time	On-going
CRWWD-8 - Review all infrastructure that has a single access point and the potential for reduced or eliminated access on roads in a severe weather event.						
Existing	Severe Weather	5,10,12	Operations	Low	Staff time	Short term
CRWWD-9 - Define alternate strategy cost estimates for capital programming for mitigation of single access to key infrastructure and the placement of redundant energy supply (generator and fuel).						
Existing	Severe Weather	2,8,9		High	Staff time	Long term
CRWWD-10 - Define response policy and procedures in the event of a large-scale event and significant impact to multiple assets.						
Existing	Severe Weather	6	Operations	Low	Staff time	On-going
CRWWD-11 - Evaluate District customer communication measures, equipment and capabilities.						
Existing	Severe Weather	1,2,3,	Administration	Low	Staff time	Short term
CRWWD-12 - Where appropriate, acquire system/equipment to communicate hazard mitigation, disaster preparedness, response and recovery information with customers.						
New	Severe Weather	1,2,3	Administration	High	Possibly DHS grants	Long term
CRWWD-13 - Evaluate redundant power capabilities and operating procedures.						
Existing	Severe Weather	5,10	Operations	Low	Staff time	Short term
CRWWD-14 - Where appropriate, implement/purchase measures to increase capabilities. Including emergency fuel storage, onsite generators, etc.						
New and Existing	Severe Weather	5,10	Operations	High	General Fund, HMGP, PDM	Long term
CRWWD-15 - Evaluate critical facilities and identify failure modes, locations and energy capacity.						
Existing	Severe Weather	6,8,10	Operations	Low	Staff time	Short term
CRWWD-16 - Review all assets that are listed in landslide potential zones and determine impact to system.						
Existing	Landslide	5,10,12	Engineering	Low	Staff time	Short term
CRWWD-17 - Define strategy on short-term emergency response and cost as well as long term mitigation strategy and capital impact including retro fitting where applicable.						
Existing	Landslide	2,8,9	Engineering	High	Staff time	Long term
CRWWD-18 - Investigate potential impact on treatment plants for conveyance flows to contain additional sediment from a volcano and direct ash flow into uncovered treatment infrastructure.						
Existing	Volcano	5,10,12	Engineering	Low	Staff time	Short term
CRWWD-19 - Define strategy for short term response and mitigation to include long term mitigation capital plan.						
New and Existing	Volcano	2,8,9	Engineering	High	Staff time	Long term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
CRWWD-20 - Review District code for all new infrastructure(s) to include hazard review for Earthquake, Flood, Severe Winter Events and Landslide impacts. Require capability investment to mitigate large scale events where feasible including redundancy, additional equipment on site and in inventory. Define average length of time to order equipment and install in the analysis.						
Existing	All Hazards	5,10,12,2,6	Engineering	Low	Staff time	Short term
CRWWD-21 - Integrate current assessment and mitigation strategies into the District's Strategic Plan and Emergency Plan.						
Existing	All Hazards	6,5	Administration	Low	Staff time	Short term
CRWWD-22 - Develop a post disaster recovery plan and procedures and incorporate into Emergency Plan.						
New and existing	All Hazards	6,5	Administration	Low	Possibly UASI	Short term
CRWWD-23 - Support county-wide initiatives, where appropriate, identified in HMP.						
New and existing	All Hazards	1,4,12	Administration	Low	Staff time	On-going
CRWWD-24 - Actively, participate in plan maintenance protocols, where appropriate, identified in HMP.						
New and existing	All Hazards	1,4,12	Operations	Low	Staff time	On-going
CRWWD-25 - Evaluate impacts of climate change on District operations and facilities.						
New and existing	All Hazards	2,5,10,11,12	Engineering	High	Possibly EPA	Long term
CRWWD-26 - Adopt climate change policy and implement, where appropriate, changes in District procedures, planning documents and operations.						
New and existing	All Hazards	11,12	Engineering	High	Staff time	On-going
CRWWD-27 - Define and develop ratepayer education on impact of a natural disaster on District infrastructure. Include what they can do to minimize impact until infrastructure is back on line.						
Existing	All Hazards	1,4	Administration	Low	Staff time	Short term
CRWWD-28 - Capture data after each hazard event to include impact, cost, and additional effort to support analysis for future mitigation efforts and update the hazard mitigation plan.						
New and existing	All Hazards	12	Operations	Low	Staff time	On-going
CRWWD-29 - Evaluate and implement measures to increase emergency capacity for emergency management, operational capability and continuity of business.						
New and existing	All Hazards	5,10,8	Administration	High	Staff time, Possible FEMA, DHS, EPA or UASI grants	On-going
CRWWD-30 - Evaluate and implement measures to deploy modern Public Safety (FirstNet) mobile communications at Salmon Creek Treatment Plant for emergency management, operational capability and continuity of business.						
Existing	All Hazards	3,5,8,10	Administration	Medium	Staff time, Possible FEMA or EPA	Short term

Table 11-9. Mitigation Strategy Priority Schedule

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

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

Table 11-10. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Earthquake	CRWWD-1, CRWWD-14, CRWWD-16, CRWWD-20	CRWWD-2	CRWWD-11, CRWWD-12, CRWWD-21, CRWWD-23, CRWWD-24, CRWWD-27	CRWWD-2, CRWWD-25, CRWWD-26	CRWWD-3, CRWWD-12, CRWWD-29, CRWWD-30	CRWWD-2
Flood	CRWWD-4, CRWWD-6, CRWWD-20	CRWWD-5	CRWWD-11, CRWWD-12, CRWWD- 21, CRWWD-23, CRWWD-24, CRWWD-27	CRWWD-5, CRWWD-25, CRWWD-26	CRWWD-7, CRWWD-12, CRWWD-29, CRWWD-30	CRWWD-5
Severe Weather	CRWWD-8, CRWWD-14, CRWWD-20	CRWWD-9, CRWWD-13, CRWWD-15	CRWWD-11, CRWWD-12, CRWWD- 21, CRWWD-23, CRWWD-24, CRWWD- 27	CRWWD-9	CRWWD-10, CRWWD-13, CRWWD-12, CRWWD-29, CRWWD-30	CRWWD-14
Landslide	CRWWD-16, CRWWD-20	CRWWD-17	CRWWD-11, CRWWD-12, CRWWD-21, CRWWD-23, CRWWD-24, CRWWD-27	CRWWD-25, CRWWD-26, CRWWD-17	CRWWD-17, CRWWD- 12, CRWWD-29, CRWWD-30	CRWWD-17
Volcano	CRWWD-18, CRWWD-19, CRWWD-20	CRWWD-19	CRWWD-11, CRWWD-12, CRWWD-21, CRWWD-23, CRWWD-24, CRWWD-27	CRWWD-18, CRWWD-25, CRWWD-26	CRWWD-19, CRWWD-12, CRWWD-29, CRWWD-30	CRWWD-19

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

12. C-TRAN PUBLIC TRANSIT BENEFIT AREA

12.1 NATURAL HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Scott Deutsch, Director of Safety & Risk
10600 NE 51st Circle.
Vancouver, WA 98662
360-906-7333 (Desk)
360-696-4494 (C-TRAN)
scott.deutsch@c-tran.org

Alternate Point of Contact

Bob Medcraft, Security Chief
10600 NE 51st Circle
Vancouver, WA 98662
360-906-7536 (Desk)
360-696-4494 (C-TRAN)
bob.medcraft@c-tran.org

12.2 JURISDICTION PROFILE

12.2.1 Overview

The C-TRAN Public Transportation Benefit Area (PTBA) is an entity founded in 1980 to provide fixed-route, paratransit, on-demand (The Current), and vanpool services to the Vancouver Urban Growth Area as defined in 2005, and the city limits of Camas, Washougal, Ridgefield, Battle Ground, La Center, and Yacolt. C-TRAN operates three transit centers: Vancouver Mall Transit Center, Fisher’s Landing Transit Center in east Vancouver, and 99th Street in Hazel Dell, plus other park and ride facilities.

A nine-member elected Board of Directors governs the C-TRAN PTBA. The board assumes responsibility for adopting this plan; C-TRAN’s Chief Executive Officer (CEO) oversees its implementation.

As of October 2022, C-TRAN serves 27 fixed-routes across Clark County with Regional and Express service into Portland, Oregon utilizing a staff of 429. Funding primarily comes from local sales tax revenue, fares, and other sources.

12.2.2 Population

The district serves a population of approximately 445,744 (2021 Clark County Census data). C-TRAN’s service area covers 143 square miles. Clark County projects continued population growth in the coming years, with most new residents living within the PTBA. As a result, C-TRAN expects the demand for transit service to grow at a similar rate as the new residents access jobs, education, and other transportation needs.

12.2.3 Assets

Table 12-1 summarizes the critical assets of the district and their value.

Table 12-1. Special Purpose District Assets

Asset	Value
Property	
7 th Street, 0.23 acres	\$222,862
Operations (65 th), 12.21 acres	\$5,127,373.77
Evergreen Transit Center, 2.31 acres	\$154,406
Central County Park-N-Ride, 11.55 acres	\$2,295,134
Fisher’s Landing Park-N-Ride, 20.39 acres	\$6,606,148
99 th Street Transit Center, 10.14 acres	\$5,239,499
Administration (51 st)	\$1,866,212.64
Total:	\$21,511,634.93
Critical Infrastructure and Equipment	
Revenue Vehicle Coaches (47 Vanpool, 52 Demand Response Buses, 116 Fixed Route Buses)	\$75,153,398.84
Fixed Route Contingency Fleet	\$1,864,755.84
Service Vehicles (26 vehicles)	\$1,460,999.97
CAD/AVL System	\$2,329,663.86
Total:	\$80,808,818.51
Critical Facilities	
65 th Ave Campus (Maint & Operations)	\$17,514,287.86
Administration (51 st)	\$6,259,971.92
99 th Street	\$11,405,899.09
Fisher’s Landing	\$6,967,635.96
Salmon Creek	\$213,368
Evergreen	\$1,897,470
Van Mall	\$8,178,78.07
Fourth Plain Corridor	\$20,413,590.13
Total:	\$72,851,005.03

12.3 PLANNING AND REGULATORY CAPABILITIES

The following existing codes, ordinances, policies, or plans apply to this Hazard Mitigation Plan:

- C-TRAN System Security Plan (SSP).
- C-TRAN Public Transit Agency Safety Plan (PTASP)
- C-TRAN Transportation Service Disruption Plan (TSDP)
- C-TRAN Continuity of Operations Plan (COOP)

12.4 FISCAL, ADMINISTRATIVE, AND TECHNICAL CAPABILITIES

Presented in Table 1-2 is an assessment of C-TRAN’s fiscal capabilities, and Table 1-3 shows C-TRAN’s assessment of administrative and technical capabilities.

Table 12-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	No

Financial Resources	Accessible or Eligible to Use?
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs: -Paratransit Special Needs Formula Grant Program -Regional Mobility Grant Program	Yes
Development Impact Fees for Homebuyers or Developers	No
Other:	Yes <ul style="list-style-type: none"> Federally Sponsored Grant Programs (Sections 5307, 5337, and 5339 Formula Funds) Existing Sales Tax Revenues Fare Revenue Advertising Revenue

Table 12-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	No	N/A
Engineers or professionals trained in building or infrastructure construction practices	No	N/A
Planners or engineers with an understanding of natural hazards	No	N/A
Staff with training in benefit/cost analysis	No	N/A
Surveyors	No	N/A
Personnel skilled or trained in GIS applications	No	N/A
Scientist familiar with natural hazards in local area	No	N/A
Emergency manager	No	N/A
Grant writers	No	N/A
Other	No	N/A

12.5 EDUCATION AND OUTREACH CAPABILITIES

Table 1-4 shows the assessment of education and outreach capabilities.

Table 12-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes: Eric Florip, Manager of Communications, Marketing, and Customer Experience
Do you have personnel skilled or trained in website development?	Yes, Dean Horn, Planning, Projects, and Design Administrator
Do you have hazard mitigation information available on your website?	No
• If yes, please briefly describe.	N/A
Do you utilize social media for hazard mitigation education and outreach?	Yes
• If yes, please briefly describe.	Weather Detours, Construction-Related Detours

Criteria	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
<ul style="list-style-type: none"> If yes, please briefly specify. 	C-TRAN Citizens Advisory Committee (CCAC)
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Facebook, Twitter, Instagram
Do you have any established warning systems for hazard events?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Transportation Service Disruption Plan (TSDP)

12.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describes C-TRAN’s process to integrate the Hazard Mitigation Plan into existing plans and programs.

12.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment, and recommendations of the hazard mitigation plan:

- C-TRAN Continuity of Operations Plan (COOP)

12.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment, or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- C-TRAN System Security Plan (SSP) – future integration from the HMP recommendations if applicable.
- C-TRAN Transportation Service Disruption Plan (TSDP) – future integration from HMP recommendations if applicable.
- C-TRAN Public Transit Agency Safety Plan (PTASP).

12.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 12-5 lists all past occurrences of natural hazards within the jurisdiction.

Table 12-5. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm	1825	Dec 12, 2008 thru Jan 5, 2009	\$107,588.71
Severe Storm	N/A	14 Dec, 2006	Unknown
Severe Storm	N/A	11 Nov, 2006	Unknown
Severe Storm	N/A	10 Feb, 1997	Unknown
Flooding	N/A	23 Feb 1996	Unknown
Severe Storm	N/A	18 Dec 1995	Unknown
Severe Winter Storm	N/A	January 2017	Unknown

12.8 C-TRAN-SPECIFIC VULNERABILITIES

Noted vulnerabilities for C-TRAN include:

- Access to a fuel source (unleaded and diesel) after a natural disaster
- Service impact from severe weather or other natural disaster, including the inability of C-TRAN employees to get to work
- Service impact from power loss at some facilities and transit centers.
- Service impact from loss of radio communication
- See C-TRAN COOP for other specific vulnerabilities

12.9 HAZARD RISK RANKING

Table 12-6 presents the ranking of the hazards of concern.

Table 12-6. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	51	High
1	Earthquake	51	High
2	Wildfire	16	Medium
3	Flood	15	Medium
3	Landslide	15	Medium
4	Dam Failure	8	Low
5	Volcano	7	Low
6	Drought	0	Low

12.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 12-7 lists the actions that make up the C-TRAN Public Transit Benefit Area Hazard Mitigation Plan; Table 12-8 identifies the priority for each action; and Table 12-9 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 12-7. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
CTAN-1 —Where appropriate, support retrofitting, purchase, or relocation of structures in high-hazard areas and prioritize structures with the highest risk of loss.						
Existing	All Hazards	4, 5, 7, 9, 10	Board	High	HMGP, PDM, FMA	Short-Term
CTAN-2 —Integrate the hazard mitigation plan into the System Security Plan (SSP), the Public Transit Agency Safety Plan (PTASP), and the Transportation Service Disruption Plan (TSDP) as appropriate in support of infrastructure investment choices, such as capital improvement.						
Existing	All Hazards	1, 2, 3, 4, 5	Executive Staff	Low	Staff Time, General Funds	On-Going
CTAN-3 —Improve existing C-TRAN hazard and maintenance databases to capture perishable data after significant events (e.g., preliminary damage estimates, claims associated with storm damage, damage photos) to support future mitigation efforts, including the implementation and annual maintenance of the Hazard Mitigation Plan, the SSP, the TSDP, and the PTASP.						
New and Existing	All Hazards	5, 6, 8, 10, 12	Executive Staff	Low	Staff Time, General Funds	Complete
CTAN-4 —Incorporate mitigation retrofits for C-TRAN facilities into the bi-annual capital improvements program, following seismic risk assessments to target high-hazard buildings for mitigation opportunities.						
Existing	All Hazards	2, 4, 5, 9, 10	Board	High	HMGP, PDM, FMA	On-Going
C-TRAN 5 —Purchase portable generators and install quick-connect emergency generator hook-ups to power critical OEM and Transit Station assets to supplement existing emergency power and provide redundancy for critical functions.						
Existing	All Hazards	5, 8, 9, 10	Board	Medium	HMGP, PDM, General Funds	Complete
CTAN-6 —Perform non-structural assessments and mitigation activities (e.g., anchor bookcases to the wall) and educate C-TRAN employees on the possible impacts of earthquakes and how to deal with them.						
Existing	Earthquake	1, 2, 3, 4, 6, 10	All C-TRAN Employees	Low	Staff Time	Ongoing
CTAN-7 —Communicate earthquake secondary hazards to the public (e.g. landslides, dam failure, fires, damage to transportation infrastructure) via website and social media.						
Existing	Earthquake	1, 2, 3, 4	Public Affairs	Low	Staff Time, General Funds	Ongoing
CTAN-8 —C-TRAN’s Continuity of Operations Plan (COOP) identifies the mitigation for contingency fuel sources in case the primary resupply source and onsite dispensing system is unavailable or damaged.						
Existing	Earthquake, Flood, Severe Storm/Weather	5, 6, 8, 10	Operations	Medium	Staff Time, General Funds, Possibly DHS grants	Short-Term
CTAN-9 —Support the county-wide initiatives identified in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-Term

Table 12-8. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
CTRAN-1	5	High	High	Yes	Yes	No	Medium	High
CTRAN-2	5	Medium	Low	Yes	No	Yes	High	Low
CTRAN-3	5	Low	Low	Yes	No	Yes	High	Low
CTRAN-4	5	High	High	Yes	Yes	No	Medium	High
CTRAN-5	4	High	Medium	Yes	Yes	No	Medium	High
CTRAN-6	6	Medium	Low	Yes	No	Yes	High	Low
CTRAN-7	4	Low	Low	Yes	No	Yes	High	Low
CTRAN-8	4	High	Medium	Yes	Possibly	No	Medium	Medium
CTRAN-9	12	Low	Low	Yes	No	Yes	High	Low

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

Table 12-9. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-1 C-TRAN-4			C-TRAN-5	C-TRAN-4
Drought	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-1 C-TRAN-4			C-TRAN-5	C-TRAN-4
Earthquake	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-1 C-TRAN-4 C-TRAN-8	C-TRAN-6 C-TRAN-7		C-TRAN-5 C-TRAN-8	C-TRAN-4
Flood	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-1 C-TRAN-4 C-TRAN-8			C-TRAN-5 C-TRAN-8	C-TRAN-4
Landslide	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-1 C-TRAN-4			C-TRAN-5	C-TRAN-4
Severe Weather	C-TRAN-2 C-TRAN-3 C-TRAN-9	C-TRAN-8			C-TRAN-5 C-TRAN-8	C-TRAN-4

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Volcano	C-TRAN-2 C-TRAN-3 C-TRAN-9				C-TRAN-5	C-TRAN-4
Wildfire	C-TRAN-2 C-TRAN-3 C-TRAN-9				C-TRAN-5	C-TRAN-4

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

13. CLARK FIRE PROTECTION DISTRICT #3

13.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Jason Mansfield, Captain
17718 NE 159 ST
Brush Prairie, WA 98606
Telephone: 360-892-2331
e-mail Address: jason@fire3.org

Alternate Point of Contact

Fire Chief, Scott Sorenson
17718 NE 159 ST
Brush Prairie, WA 98606
Telephone: 360-892-2331
e-mail Address: scott@fire3.org

13.2 JURISDICTION PROFILE

13.2.1 Overview

Fire District 3 is an all-risk response agency; meaning, that to the best of its ability, it will respond to any emergency-related situation (fires, rescues, medical emergencies, hazardous materials incidents, natural and manmade disasters, etc.). Fire District 3 was legally formed in 1947 as authorized by Washington State statute (RCW 52.02.020). The district is governed under the policy-making direction of a three-member board of Fire Commissioners. The board assumes responsibility for the adoption of this plan; the Fire Chief will oversee its implementation.

Fire District 3 currently has 52 full time employees and maintains a pool of approximately 25 volunteers. Fire District 3 is a Junior Taxing District and receives its funds through property taxes, some special purpose taxes like timber tax, and a service contract with the City of Battle Ground. The district's services span 92 square miles, including the City of Battle Ground and eight major unincorporated areas: (a) Hockinson, (b) Brush Prairie, (c) Venersborg, (d) Rawson Rd, (e) Heisson, (f) Battle Ground Lake, (g) Crawford, and (h) Lucia Falls. As reported by the County's GIS, approximately 44,928 people reside within Fire District 3's response area.

13.2.2 Service Area and Trends

The district serves a population of 44,928. Its service area covers an area of 92 square miles, which has a total replacement value of \$7.037,492,013 billion.

Fire District 3 has seen an approximate average of a 10 percent increase in assessed valuation annually. There has been an increase of undeveloped land being converted to light industrial and residential use in our service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our five-year response average is 4,338.4 incidents per year with an average 6 percent yearly increase in response. With the proposed rezoning and development of the Urban Land Bank along SR 503, we are projecting the necessity of adding an additional station to meet the service needs of that area as well as increased staffing levels to meet the needs of the entire District. The fire district has existing plans of building a new fire station in the City of Battle Ground to replace Station 35 with a construction date TBA.

13.2.3 Assets

Table 1-1 summarizes the critical assets of the district and their value.

Table 13-1. Special Purpose District Assets

Asset	Value
Property	
21.23 acres of land	\$2,414,490
Critical Infrastructure and Equipment	
7 Fire Engines and contents	\$4,550,000
1 Ladder Truck	\$1,029,686
5 Squads and contents	\$664,479
1 Rescues and contents	\$50,000
2 Water Tenders and contents	\$828,761
3 Command Vehicles	\$227,189
2 Fire Marshall	\$25,000
1 Ambulance/Rehab	\$10,000
3 utility	\$30,000
Total:	\$7,415,115
Critical Facilities	
Station 31, Hockinson	\$2,363,120
Station 32, Venersborg	\$1,318,238
Station 33, Battle Ground Lake	\$1,203,687
Station 34, Rawson Rd	\$1,277,362
Station 35, Battle Ground	\$1,123,989
Personal Property All Stations	\$2,216,860
	\$7,286,396

13.3 PLANNING AND REGULATORY CAPABILITIES

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

- Interim Final Rule 44 CFR part 201.6 – Requires a local jurisdiction have a Local Mitigation Plan in place to be FEMA compliant.
- Washington State Legislature RCW 38.52.070 - Directs local organizations to develop an emergency management plan which becomes a part of the state's comprehensive emergency management plan.
- Clark Regional Comprehensive Regional Emergency Response Plan - Identifies authorities and assigns responsibilities for planning, response, and recovery activities.

13.4 FISCAL, ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The jurisdiction participates in the Public Protection Class Rating System and currently has a rating of 4. This rating was achieved in September, 2014. An assessment of fiscal capabilities is presented in Table 1-2. An assessment of administrative and technical capabilities is presented in Table 1-3.

Table 13-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other - Private Grants	Yes

Table 13-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Fire District 3, Fire Marshall
Engineers or professionals trained in building or infrastructure construction practices	Yes	Fire District 3, Fire Marshall
Planners or engineers with an understanding of natural hazards	No	
Staff with training in benefit/cost analysis	Yes	Scott Sorenson, Fire District 3, Fire Chief; Assistant Chief
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Clark County GIS, Contract Support
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Sean Smith, Fire District 3, Emergency Manager
Grant writers	Yes	Scott Sorenson, Fire District 3, Fire Chief, Assistant Chief.
Other	No	

13.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 13-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes
If yes, please briefly describe.	We periodically put information about wildfires, floods, earthquakes, volcanoes, and tornadoes on our website. We also have links to various sites with useful information.
Do you utilize social media for hazard mitigation education and outreach?	Yes
If yes, please briefly describe.	Much like our website, we periodically put information about hazard mitigation on our Facebook page.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
If yes, please briefly specify.	
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
If yes, please briefly describe.	We have a large roadside variable message sign that we can and do place out at strategic locations making people aware of certain conditions.
Do you have any established warning systems for hazard events?	No
If yes, please briefly describe.	

13.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into existing plans and programs.

13.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- **Emergency Management Program:** The program manager leads the process for creation and implementation of the hazard mitigation plan. Prior to implementation, the plan is reviewed and voted on the adoption of the plan by a Board of Commissioners.

13.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- **Fire District 3 utilizes a strategic planning process** where a new strategic plan is developed once every five years guiding the district’s growth and operations. The district’s 2020 strategic plan is in operation until 2025 where a new strategic plan will be developed. The current strategic plan addresses hazard mitigation and risk assessment.
- **Fire District 3 Disaster Plan:** This plan currently lays out the roles and responsibilities of Fire District 3 personnel in the event of a disaster. Information from the hazard mitigation plan will be incorporated as appropriate.
- **Policy 1102 Emergency Power.** The purpose of this policy is to establish a process for identifying emergency power needs or relocation plans for critical facilities and/or equipment. The Fire Chief is responsible for creation and implementation of the Emergency Power plan.
- **Policy 716 Public Alerts.** The purpose of this policy is to provide guidelines for notifying the public of vital fire safety information and/or emergency evacuation instructions. The Fire Chief is responsible for appointing an administrator for the Public Alert system.

13.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-5 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Tornado		03/21/2013	\$15,000
Wind Storm	1682	12/14/2006	\$190,000
Wind Storm		12/18/2005	\$45,000
Wind Storm		12/12/2004	\$50,000
Lightning		6/21/1997	Unknown
Flood		12/12/1996	Unknown
Wind Storm Clark Co		12/21/2015	Unknown
Thunder Storm Clark Co		12/07/2015	Unknown
Severe Winter Storm	4253	12/01/2015	Unknown

Wind Storm Clark Co			11/17/2015	Unknown
Wind Storm Clark Co			10/15/2016	Unknown
Wind Storm Clark Co			12/08/2016	Unknown
Thunder Storm Clark Co			06/07/2018	Unknown
Wind Storm Clark Co			1/05/2019	Unknown
Wind Storm Clark Co			09/07/2020	Unknown
Biological (Covid-19)	4481		3/22/2020	Unknown

13.8 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities in the jurisdiction include:

- Replace Station 35 with a new station in the City of Battle Ground.

13.9 HAZARD RISK RANKING

Table 1-6 presents the ranking of the hazards of concern.

Table 13-6. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	54	Medium
2	Severe Weather	42	Medium
3	Wildfire	32	Medium
4	Landslide	6	Low
5	Flood	3	Low
6	Drought	0	None
7	Volcano	3	Low
8	Dam Failure	0	None

13.10 STATUS OF PREVIOUS PLAN INITIATIVES

Table 13-7 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table were developed in 2016.

Table 13-7. Status of Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.		x	
Comment:			
Integrate the hazard mitigation plan into other plans and programs that support infrastructure investments choices, such as the capital improvement program.		x	
Comment:			

Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.		x	
Comment:			
Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.		x	
Comment:			
Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.		x	
Comment:			
Develop a post-disaster recovery plan and a debris management plan.		x	
Comment:			
Require rapid damage assessment training for all staff.		x	
Comment:			
Identify funding opportunities for the purchase of a backup generator at Station 34.	x		
Comment:			
Assess emergency response routes and determine backup options in case of damage or disruption.		x	
Comment:			
Develop and implement a 10-14 day food and water plan for staff members at critical facilities.		x	
Comment:			
Perform non-structural assessments and mitigation activities (e.g. anchor bookcases to the wall).		x	
Comment:			
Encourage residents to post addresses where they are visible to first responders.		x	
Comment:			
Replace 44 year old water tender with updated apparatus.	x		
Comment:			
Develop evacuation/emergency road plans and prioritize roads for response efforts.		x	
Comment:			
Seek alternative water supplies in urban wildland interface areas.		x	
Comment:			

13.11 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-8 lists the actions that make up the Municipal Jurisdiction Name hazard mitigation action plan. Table 1-9 identifies the priority for each action. Table 1-10 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 13-8. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
FD3-1 —Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.						
Existing	All Hazards	4, 5, 7, 9, 10	Facilities	High	HMGP, PDM,	Short-term
FD3-2 —Integrate the hazard mitigation plan into other plans and programs that support infrastructure investments choices, such as the capital improvement program.						
New and Existing	All Hazards	2, 4,	Board	Low	Staff Time, General Funds	On-going
FD3-3 —Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.						
Existing	All Hazards	1, 2, 4, 12	Emergency Management	Medium	Staff Time, General Funds	Short-term
FD3-4 —Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-term
FD3-5 —Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.						
New and Existing	All Hazards	1, 4	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-term
FD3-6 —Develop a post-disaster recovery plan and a debris management plan.						
Existing	All Hazards	1, 2, 4, 9	Emergency Management	Medium	EMPG	Long-term
FD3-7 —Require rapid damage assessment training for all staff.						
New and Existing	All Hazards	2, 4, 6, 12	Training	Low	Staff Time, General Funds	On-going
FD3-8 —Identify funding opportunities for the purchase of a backup generator at Station 34.						
New and Existing	All Hazards	5, 6, 8, 9, 10	Facilities	High	EMPG, HMGP, PDM, Staff Time, General Funds	Short-term
FD3-9 —Assess emergency response routes and determine backup options in case of damage or disruption.						
New and Existing	All Hazards	2, 4, 5, 6,	Operations	Low	Staff Time, General Funds	On-going

FD3-10 —Develop and implement a 10-14 day food and water plan for staff members at critical facilities.						
New and Existing	All Hazards	4, 5, 6, 10, 12	Emergency Management	Medium	EMPG, Staff Time, General Funds	On-going
FD3-11 —Perform non-structural assessments and mitigation activities (e.g. anchor bookcases to the wall).						
Existing	Earthquake, Severe Weather	5, 6, 9, 10	Facilities	Medium	EMPG, Staff Time, General Funds	Short-term
FD3-12 —Encourage residents to post addresses where they are visible to first responders.						
Existing	All Hazards	1, 2, 4,	Public Education	Low	Staff Time, General Funds	On-going
FD3-13 —Replace 44 year old water tender with updated apparatus.						
Existing	All Hazards	1, 2, 4,	Apparatus	High	AFG, EMPG, Staff Time, General Funds	Short-Term
FD3-14 —Develop evacuation/emergency road plans and prioritize roads for response efforts.						
New and Existing	All Hazards	1, 2, 4, 5, 6,	Operations	Low	Staff Time, General Funds	
FD3-15 —Seek alternative water supplies in urban wildland interface areas.						
New and Existing	Wildfire	4, 6,11	Operations	Low	Staff Time, General Funds	

Table 13-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
FD3-1	5	High	High	Yes	Yes	No	Medium	High
FD3-2	2	Medium	Low	Yes	No	Yes	High	Low
FD3-3	4	Low	Medium	Yes	No	No	Low	Low
FD3-4	12	Low	Low	Yes	No	Yes	High	Low
FD3-5	2	Low	Low	Yes	No	Yes	High	Low
FD3-6	4	Medium	Medium	Yes	Yes	No	Medium	High
FD3-7	4	Low	Low	Yes	No	Yes	Medium	Low
FD3-8	5	Medium	High	Yes	Yes	No	Medium	High
FD3-9	4	Medium	Low	Yes	No	Yes	High	Low
FD3-10	5	Medium	Medium	Yes	Yes	Yes	Medium	Low
FD3-11	4	High	Medium	Yes	Yes	Yes	Medium	Low

FD3-12	3	High	Low	Yes	No	Yes	High	Low
FD3-13	3	High	High	Yes	Yes	No	Medium	High
FD3-14	5	Medium	Low	Yes	No	Yes	High	Low
FD3-15	4	Medium	Low	Yes	No	Yes	High	Low

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

Table 13-10. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14	
Drought	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14	
Earthquake	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8, FD3-11	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-11, FD3-12, FD3-13, FD3-14	
Flood	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14	
Landslide	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14	
Severe Weather	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8, FD3-11	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-11, FD3-12, FD3-13, FD3-14	
Volcano	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14	
Wildfire	FD3-2, FD3-3, FD3-4, FD3-5, FD3-6,	FD3-1, FD3-8	FD3-4, FD3-12		FD3-6, FD3-7, FD3-9, FD3-10, FD3-12, FD3-13, FD3-14, FD3-15	

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

14. PORT OF VANCOUVER USA

14.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Scott Ouchi, Safety, Risk, & Emergency Mgr.
3103 NW Lower River Rd
Vancouver, WA 98660
Telephone: 360-823-5340
e-mail Address: souchi@portvanusa.com

Alternate Point of Contact

Todd Krout, Director of Operations
3103 NW Lower River Rd
Vancouver, WA 98660
Telephone: 360-823-5323
e-mail Address: tkrout@portvanusa.com

14.2 JURISDICTION PROFILE

14.2.1 Overview

The Port of Vancouver was created in 1912 by Clark County residents to ensure that prime industrial and marine property on the waterfront was retained for public economic benefit. The port receives income from tenant leases and vessel fees which covers operating costs such as salaries, rents, utilities and business services. The port also invests in capital improvements to build and improve port facilities like rail and docks. These capital improvements are paid partly from income the port generates. But they also are paid by tenants and customers through fees, port district residents through taxes, and state and federal grant programs.

Today, the port is home to more than 50 businesses that employ more than 3,900 employees and indirectly employs another 24,000 people which generates about \$3.8 billion in economic activity annually. Combined, the port and its tenants pay more than \$132 million annually in state and local taxes. The port is governed by a three-person Board of Commissioners, whose members are elected on six-year staggered terms. The commissioners hire a CEO who is charged with overseeing port operations, carrying out policies and overseeing staff. The Board of Commissioners will assume responsibility for the adoption of this plan and the CEO will oversee its implementation.

14.2.2 Service Area and Trends

The Port District serves a population of roughly 335,569 within 111 square miles that makes up the three taxing districts. Its service area covers an area of 2,100 acres, which has a total replacement value of \$51,004,771,581 billion. According to a recent economic study, the economic benefit of the port's marine and industrial activities increased from \$2.9 billion in 2014 to \$3.8 billion. Over the next few years, the port will focus on maximizing marine business, including the movement of commodities such as grain, steel, automobiles and energy infrastructure components. Additionally, the port will focus on expanding its industrial properties, including the development of the Terminal 1 project, which will open up access to the waterfront for the enjoyment of the entire community. For industrial business and development, industrial warehouse space continues to be nearly or completely leased, driving the need for new shovel-ready properties. The port has 50 acres of undeveloped property available for light industrial use and 600 acres available for future development.

14.2.3 Assets

Table 14-1 summarizes the critical assets of the district and their value.

Asset	Value
Property	
1,288 acres of land	\$155,250,025 million
Critical Infrastructure and Equipment	
Buildings and Structures	\$120,942,806
Machinery and Equipment	\$28,791,049
Total:	\$149,733,855
Leasehold Improvements	\$268,550,860
Total:	\$573,534,740

14.3 PLANNING AND REGULATORY CAPABILITIES

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

- 2022 Capital Maintenance Improvement Plan
- 2018 Strategic Plan

14.4 FISCAL, ADMINISTRATIVE AND TECHNICAL CAPABILITIES

An assessment of fiscal capabilities is presented in Table 14-2. An assessment of administrative and technical capabilities is presented in Table 14-3.

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
State and Federal Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering & Project Delivery
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering & Project Delivery
Planners or engineers with an understanding of natural hazards	Yes	Engineering & Project Delivery
Staff with training in benefit/cost analysis	Yes	Finance & Admin

Staff/Personnel Resources	Available?	Department/Agency/Position
Surveyors	No	
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	Yes	Environmental Services
Emergency manager	Yes	Operations
Grant writers	Yes	Finance & Admin
Other		

14.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 14-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes, External Affairs
Do you have personnel skilled or trained in website development?	Yes, External Affairs
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	No
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes Radio communications, bi-weekly staff meetings, safety committee meetings and Joint Accident Prevention Committee meetings
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	No

14.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction's process for integrating the hazard mitigation plan into existing plans and programs.

14.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- None at this time.

14.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Emergency Response Plan—Identifies potential hazards and protocols for dealing with hazards. Information from the hazard mitigation plan will be incorporated at the next update, as appropriate.

- Water System Emergency Response Plan—Identifies potential hazards and protocols for dealing with hazards. Information from the hazard mitigation plan will be incorporated at the next update, as appropriate.

14.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 14-5 lists all past occurrences of natural hazards within the jurisdiction.

Table 14-5. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
High Winds		11/01/2015	\$17,585.73
High Winds		11/11/2014	\$16,626.39

14.8 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities the jurisdiction include:

- Identified areas of vulnerability include: volcanic ash fall; earthquake liquefaction; flooding and severe weather events.
 - POV has facilities located on liquefiable soil.
 - POV has many structures that are older and may not be built to current seismic codes.

14.9 HAZARD RISK RANKING

Table 14-6 presents the ranking of the hazards of concern.

Table 14-6. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
	Severe weather	48	High
	Flood	42	Medium
	Earthquake	36	High
	Dam failure	18	Medium
	Landslide	3	Low
	Volcano	3	Low
	Drought	0	None
	Wildfire	0	None

14.10 STATUS OF PREVIOUS PLAN INITIATIVES

Table 14-7 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared. The actions identified in the following table were developed in 2016.

Table 14-7. Previous Plan Initiatives

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.		x	
Comments:			

Perform assessments of non-structural items (bookcases/racking, etc.) and ensure secured to fixed structure.		x	
Comments: Identified and secured several non-structural fixtures. This will be on-going as new non-structural fixtures get added over the years.			
Develop a Business Continuity and Disaster Recovery plan, involving key stakeholders.	x		
Comments:			
Assess property elevations to ensure the floodplain is considered in existing and future developments.		x	
Comments: The port is currently working on developing a Fill Permitting Strategy to elevate certain ports parcel above the regulatory base flood (100 year recurrence) elevation. This relates to port parcels 3, 7, and 10; as well as Terminal 5 West. This accounts for approximately 600 acres of land located within the floodplain, that will be filled in the future. In Calendar Year 2022 and 2023, we will begin the process of engineering and permitting for this earthwork. Due to the large quantity of fill required, this process will occur over many years and improvements will be realized in incremental yearly changes			
Develop volcanic emergency action plan; identify resources that may be negatively impacted; and educate employees on impacts and emergency plans.	x		
Comments:			

14.11 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 14-8 lists the actions that make up the Port of Vancouver USA hazard mitigation action plan. Table 14-9 identifies the priority for each action. Table 14-10 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 14-8. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
POV-1: Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.						
Existing	All Hazards	4,5,9,10	POV Operations	High	Staff time/Port expense	On-going
POV-2: Perform assessments of non-structural items (bookcases/racking, etc.) and ensure secured to fixed structure.						
Existing	Earthquake	4,5,9,10	POV Operations	Low	Staff time/Port expense	Short term
POV-3: Develop a Business Continuity and Disaster Recovery plan, involving key stakeholders.						
Existing	All Hazards	4,5,8,12	POV Operations	Low	Staff time/Port expense	Short term
POV-4: Assess property elevations to ensure the floodplain is considered in existing and future developments.						
Both	Flood	4,5,6,8,9,10	POV Operations	Low	Staff time/Port expense	On-going
POV-5: Develop volcanic emergency action plan; identify resources that may be negatively impacted; and educate employees on impacts and emergency plans.						
Both	Ash Fall (Volcano)	4,5,6,8,10	POV Operations	Medium	Staff time/Port expense	On-going

Table 14-9. Mitigation Strategy Priority Schedule

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

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

Table 14-10. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Severe Weather	POV-1, POV-2, POV-3, POV-4, POV-5	POV-1, POV-2	POV-3		POV-3	POV-1
Flood	POV-1, POV-3, POV-4	POV-1, POV-4	POV-3	POV-4	POV-3	
Earthquake	POV-1, POV-2, POV-3, POV-4	POV-1, POV-2	POV-3		POV-3	POV-1
Dam failure	POV-1, POV-3	POV-1	POV-3		POV-3	POV-1
Landslide	POV-1, POV-3	POV-1	POV-3		POV-3	POV-1
Volcanic Ash Fall	POV-1, POV-3, POV-5	POV-1, POV-3, POV-4	POV-3, POV-5		POV-3	

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

14.12 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

- Seismic infrastructure and structural retrofit assessment.

15. VANCOUVER PUBLIC SCHOOLS

15.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Nicole Daltoso
Facilities Planning Manager
2901 Falk Rd
Vancouver, WA 98661
Telephone: 360-313-1048
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Alternate Point of Contact

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15.2 JURISDICTION PROFILE

15.2.1 Overview

Formed in 1852, Vancouver Public Schools is a public-school district comprised of 21 elementary schools, six middle schools, five high schools, an arts school, a STEM school, and three additional programs across 58 square miles. The district includes approximately 22,000 students and 3,300 employees. Over the years we've inspired, challenged, urged, supported, and charged into unexplored territory. In concert with an informed, engaged community, we've developed plans that have produced incredible results. We continue to look ahead.

Members of the Vancouver Public Schools board of directors are elected by the citizens of the community to four-year terms. The board set the district's goals and policies and is the governing body for adoption of school budgets. The Vancouver Public Schools board of directors assume responsibility for the adoption of this plan; Facility Support Services will oversee its implementation.

Vancouver Public Schools is funded through State, Federal, and Local funds.

15.2.2 Service Area and Trends

Approximately 142,905 people reside within the district's service area. The district currently serves a population of 22,000 students. Its service area covers an area of 58 square miles.

15.2.3 Assets

Table 15-1 summarizes the critical assets of the district and their value.

Table 15-1. Special Purpose District Assets

Asset	Value
Property	
Total acreage: 694.75	\$11,284,016
Critical Infrastructure and Equipment	
Vehicles	\$18,887,859
Maintenance Equipment	\$774,000
Total	\$19,661,859
Critical Facilities	Building + Contents
Administration/Other – Warehouse	\$10,859,851
Administration/Other – Central Office/Pool	\$28,569,520
Administration/Other – Pool	\$2,475,233
Administration/Other – Kiggins Bowl Complex	\$2,833,532
Administration/Other – Maintenance/Grounds	\$4,732,123
Administration/Other – Transportation	\$10,188,978
Administration/Other – Rental House	\$25,000
Administration/Other – Various Storage	\$180,000
Alki Middle School	\$31,197,240
Benjamin Franklin Elementary School	\$12,101,082
Benjamin Franklin Elementary School – Double Portable	\$170,000
Benjamin Franklin Elementary School – Double Portable	\$170,000
Benjamin Franklin Elementary School – Double Portable	\$170,000
Chinook Elementary School	\$20,339,638
Chinook Elementary School – Double Portable	\$170,000
Columbia River High School	\$57,448,270
Discovery Middle School	\$34,885,340
Dwight D. Eisenhower Elementary School	\$19,486,600
Eleanor Roosevelt Elementary School	\$23,259,220
Eleanor Roosevelt Elementary School – Single Portable	\$122,000
Eleanor Roosevelt Elementary School – Double Portable	\$170,000
Felida Elementary School	\$20,144,026
Fort Vancouver High School	\$70,163,670
Fort Vancouver High School – Double Portable	\$170,000
Fruit Valley Elementary School	\$11,005,339
Gaiser Middle School	\$30,770,860
Gaiser Middle School – Single Portable	\$122,000
Gaiser Middle School – Single Portable	\$122,000

Gaiser Middle School – Single Portable	\$122,000
Gaiser Middle School – Single Portable	\$122,000
GATE House	\$1,125,960
Harney Elementary School	\$19,414,360
Harney Elementary School – Double Portable	\$170,000
Harney Elementary School – Double Portable	\$170,000
Harry S Truman Elementary School	\$22,242,950
Hazel Dell Elementary School	\$15,920,120
Hazel Dell Elementary School – Double Portable	\$170,000
Heights Campus	\$15,513,940
Home Connection/Virtual Academy	\$11,966,750
Hough Elementary School	\$15,085,517
Hudson’s Bay High School	\$70,878,544
iTech Preparatory School	\$30,300,000
Jason Lee Middle School	\$27,312,725
Jason Lee Middle School – Single Portable	\$122,000
Jason Lee Middle School – Single Portable	\$122,000
Jason Lee Middle School – Single Portable	\$122,000
Lake Shore Elementary School	\$18,736,280
Lewis & Clark High School (Flex Academy)	\$3,808,960
Lincoln Elementary School	\$18,144,000
Martin Luther King Jr. Elementary School	\$19,251,975
McLoughlin Middle School & George C. Marshall Elementary School	\$69,000,000
Minnehaha Elementary School	\$17,436,680
Peter S. Ogden Elementary School	\$26,000,000
Peter S. Ogden Elementary School (Old Building)	\$11,186,000
Ruth Bader Ginsburg Elementary School	Opening Fall 2023
Sacajawea Elementary School	\$13,239,800
Salmon Creek Elementary School	\$18,005,769
Sarah J. Anderson Elementary School	\$19,599,731
Sarah J. Anderson Elementary School – Double Portable	\$170,000
Skyview High School	\$82,248,900
Thomas Jefferson Middle School	\$35,129,380
Vancouver Innovation Technology & Arts (VITA)	Opening Fall 2022
Vancouver School of Arts & Academics (VSAA)	\$30,464,138
Walnut Grove Elementary School	\$19,661,867
Washington Elementary School	\$13,827,980

Total (Building + Contents)	\$1,038,843,848
Total (Building/Contents & Vehicles/Equipment)	\$1,058,505,707

15.3 PLANNING AND REGULATORY CAPABILITIES

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

- VPS Board of Directors Policies
- VPS Strategic Plan
- Capital Facilities Plan
- Clark County Codes
- City of Vancouver Codes

15.4 FISCAL, ADMINISTRATIVE AND TECHNICAL CAPABILITIES

An assessment of fiscal capabilities is presented in Table 15-2. An assessment of administrative and technical capabilities is presented in Table 15-3.

Table 15-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes - Impact Fees
Other	No

Table 15-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Department / External consultants
Engineers or professionals trained in building or infrastructure construction practices	Yes	Facilities Department / External consultants
Planners or engineers with an understanding of natural hazards	Yes	External consultants
Staff with training in benefit/cost analysis	Yes	Business Services
Surveyors	No	NA
Personnel skilled or trained in GIS applications	Yes	Planning Department
Scientist familiar with natural hazards in local area	No	NA
Emergency manager	Yes	Facilities, Safety/Security, Environmental Safety, Building Admin, Superintendent
Grant writers	Yes	Business Services
Other	No	NA

15.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 15-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No
<ul style="list-style-type: none"> If yes, please briefly describe. 	NA
Do you utilize social media for hazard mitigation education and outreach?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Employee outreach – internal intranet; social media channels – Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
<ul style="list-style-type: none"> If yes, please briefly specify. 	NA
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Blackboard mass communication, Blackboard mobile app, FlashAlert, VPS district school closure info line, district website
Do you have any established warning systems for hazard events?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Blackboard mass communication, Blackboard mobile app, FlashAlert, VPS district school closure info line, district website

15.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into existing plans and programs.

15.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- None identified at this time.

15.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- VPS Strategic Plan
- Capital Facilities Plan

15.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 15-5 lists all past occurrences of natural hazards within the jurisdiction.

Table 15-5. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Flooding	NA	May 31, 1948	NA
Columbus Day Storm	NA	October 10, 1962	NA
Tornado	NA	April 5, 1972	NA
Volcanic Eruption, Mount St. Helens	DR-623	May 21, 1980	NA
Tornado	NA	January 10, 2008	NA

15.8 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities the jurisdiction include:

- Older facilities may not have been built to modern seismic standards.
- Many facilities have roofs that are at or beyond their life expectancy.

15.9 HAZARD RISK RANKING

Table 15-6 presents the ranking of the hazards of concern.

Table 15-6. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	51	High
1	Earthquake	48	High
2	Flood	18	High
2	Landslide	12	High
4	Wildfire	12	Medium
6	Dam Failure	8	Low
3	Drought	3	Low
5	Volcano	1	Low

15.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 15-7 lists the actions that make up the Vancouver Public Schools hazard mitigation action plan. Table 15-8 identifies the priority for each action. Table 15-9 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 15-7. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
VSD-1 – Perform roof replacements on roofs that have met or exceeded their life expectancy						
Existing	Severe Weather, Tornado	9, 10	Vancouver School District - Planning and Maintenance; External Architects	High-Medium	Bond, Levy General Fund, HMGP, PDM	Short-term
VSD-2 – Purchase back-up generators for facilities; central office ITS						
Existing	All hazards	2, 3, 10	Vancouver School District - Information Technology Services; Planning and Maintenance	High	General Fund, HMGP, PDM	Short-term
VSD-3 – All new buildings are to be built to current seismic building code						
New	Earthquake	4, 5, 9, 10	Vancouver School District - Planning; External Architects	High	Bond	Short-term
VSD-4 – Where appropriate, support retro-fitting, purchase or relocation of structures, or removal of hazards, such as trees, susceptible to causing damage that are located in high hazard areas, and prioritize those structures that have experienced repetitive losses.						
Existing	All hazards	4, 5, 7, 9, 10	Vancouver School District - Planning and Maintenance	High	General Fund, HMGP, PDM	Long-term
VSD-5 – Continue efforts to streamline and revise emergency response plans, recovery and continuity plans, and integrate mitigation planning into these processes						
New & Existing	All hazards	1, 2, 3, 4, 6, 10, 11, 12	Vancouver School District - Safety/Security, Environmental Safety, district wide	Low	General Fund, Staff Time, EMPG	Ongoing
VSD-6 – Support the County-wide initiative in Volume 1 of the hazard mitigation plan						
New and existing	All hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Lead contact Department for Plan	Low	Staff Time, General Funds	Short-term
VSD-7 – Actively participate in the plan maintenance strategy outlined in Volume 1 of the hazard mitigation plan						
New and existing	All hazards	1, 4	Lead contact Department for Plan	Low	Staff Time, General Funds	Short-term

Table 15-8. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
VSD-1	2	High	High	No	Yes	No	Low	High
VSD-2	3	Medium	High	No	Yes	No	Low	Medium
VSD-3	4	High	Low	Yes	No	Yes	High	NA
VSD-4	5	High	High	Yes	Yes	No	High	High
VSD-5	8	Low	Low	Yes	Yes	Yes	Medium	Low
VSD-6	12	Low	Low	Yes	No	Yes	Medium	Low
VSD-7	2	Low	Low	Yes	No	Yes	Medium	Low

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

Table 15-9. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Drought	VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Earthquake	VSD-1, VSD-2, VSD-3, VSD-4, VSD-5, VSD-6, VSD-7	VSD-3, VSD-4	VSD-5, VSD-6		VSD-5	
Flood	VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Landslide	VSD-1, VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Severe weather	VSD-1, VSD-2, VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Volcano	VSD-1, VSD-2, VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	
Wildfire	VSD-1, VSD-4, VSD-5, VSD-6, VSD-7	VSD-4	VSD-5, VSD-6		VSD-5	

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

16. RIDGEFIELD SCHOOL DISTRICT

16.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Chris Griffith, Assistant Superintendent
2724 South Hillhurst Road
Ridgefield, WA 98642
Telephone: 360-619-1304
e-mail Address: chris.griffith@ridgefieldsd.org

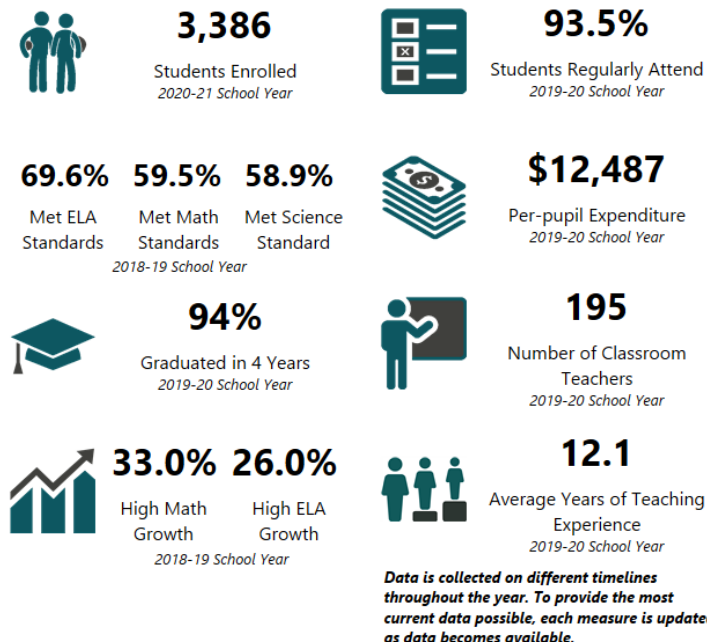
Alternate Point of Contact

Nathan McCann, Superintendent
2724 South Hillhurst Road
Ridgefield, WA 98642
Telephone: 360-619-1302
e-mail Address: Nathan.mccann@ridgefieldsd.org

16.2 JURISDICTION PROFILE

16.2.1 Overview

The Ridgefield School District offers an academic program with a proven record of achievement. Ridgefield has a long history as a district with a strong curriculum—a blend of common-sense basic skills instruction and creative strategies that promotes higher-level thinking and reasoning. Ridgefield students typically have performed at or among the highest when compared with students across the region.



Ridgefield School District currently employs nearly 195 certificated teachers, 11 administrators and roughly 100 classified employees to support students and certificated staff.

The district operates on a budget of nearly \$52.4 million collected from a variety of sources.

2021-22:

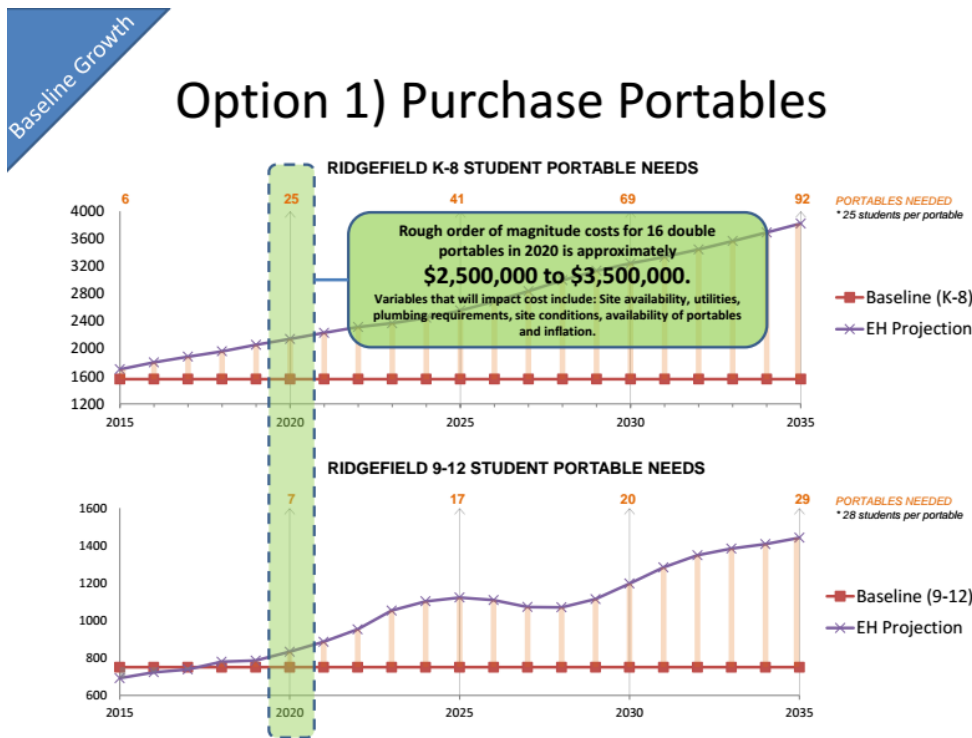
- Local Taxes - 13.3%
- Local Nontax - 3.4%
- State - 75.2%
- Federal - 7.8%
- Other - 0.3%

The Ridgefield School District school board assumes responsibility for the adoption of this plan; the Office of the Superintendent will oversee its implementation.

16.2.2 Service Area and Trends

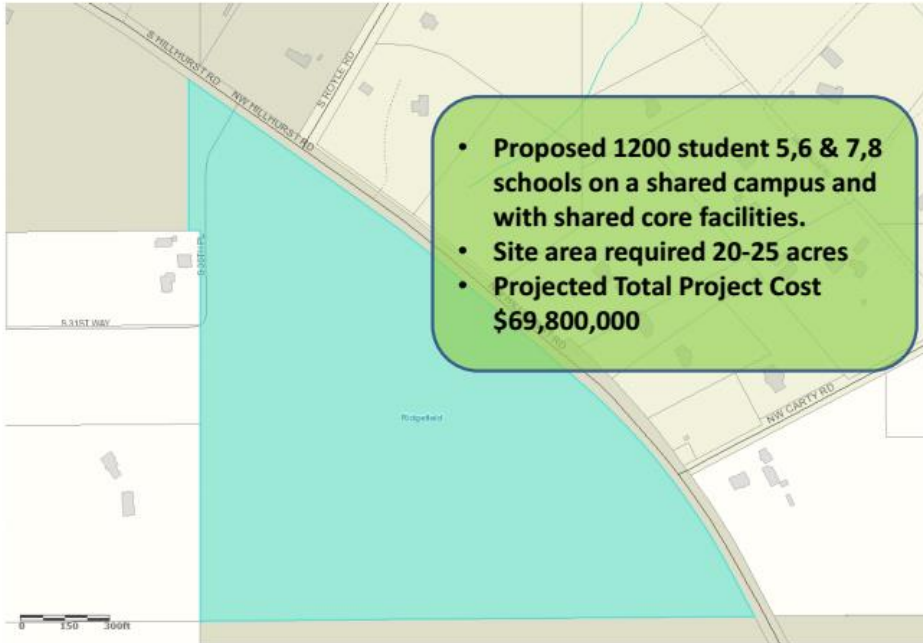
The district serves a population of 3,700 students. Its service area covers an area of 57.3 square miles, which has a total replacement value of \$2.7 billion. Approximately, 20,000 people reside within the service area of the district.

Currently the Ridgefield School District is the fastest growing district in Clark County (percent of student population based). This has created a need for additional classrooms. In 2017 the Ridgefield School District successfully passed a \$78 million bond that constructed a new joint 5/6 intermediate school and replacement 7/8 middle school (option #2 below). The Ridgefield School District has since asked the voters three times for additional bonding capacity to add classroom space, both of which failed to reach the required 60% supermajority. The failure of those bond measures has necessitated the district purchase additional portables (option #1 below). The district is currently running another bond measure, seeking community support to build a new elementary school (option #3 below).



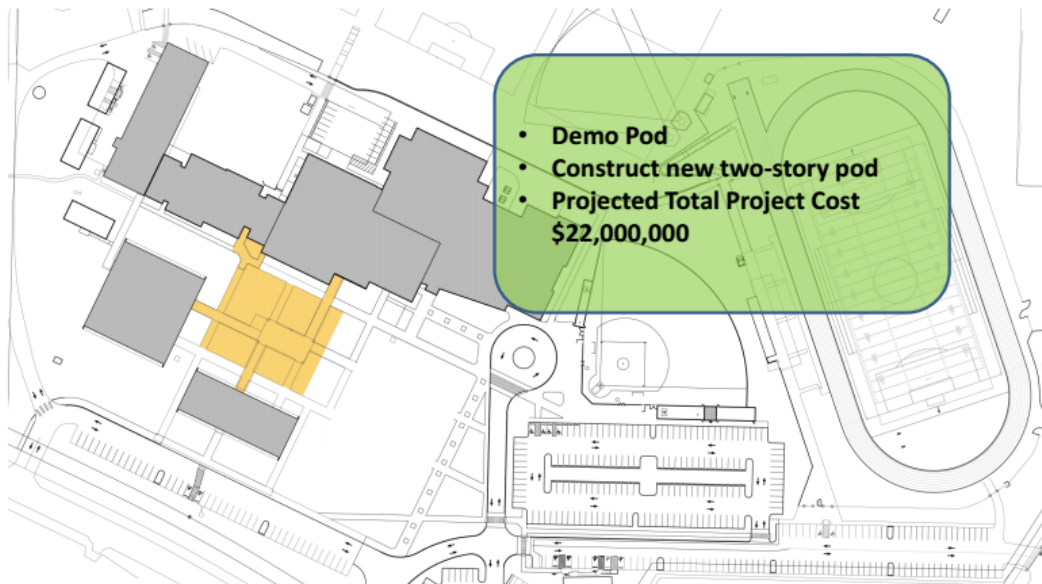
Baseline Growth

Option 2) Build a New School for Grades 5-8, Reconfigure SRES and URES as K-4



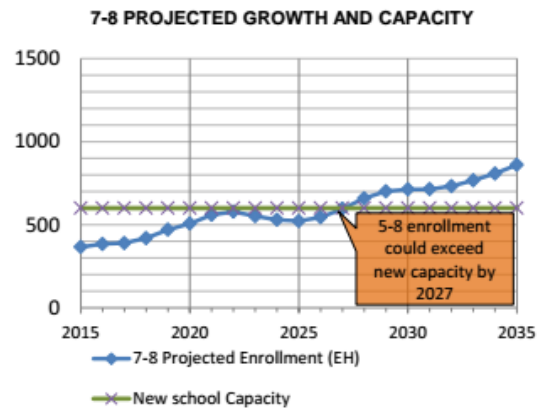
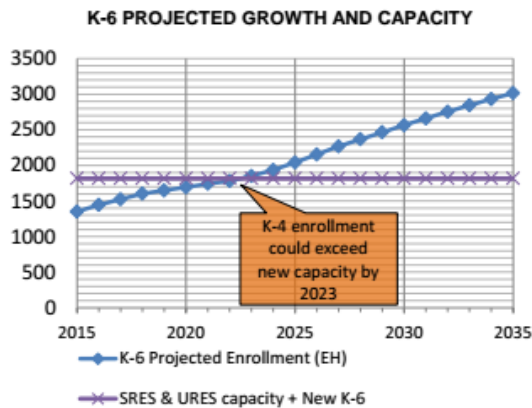
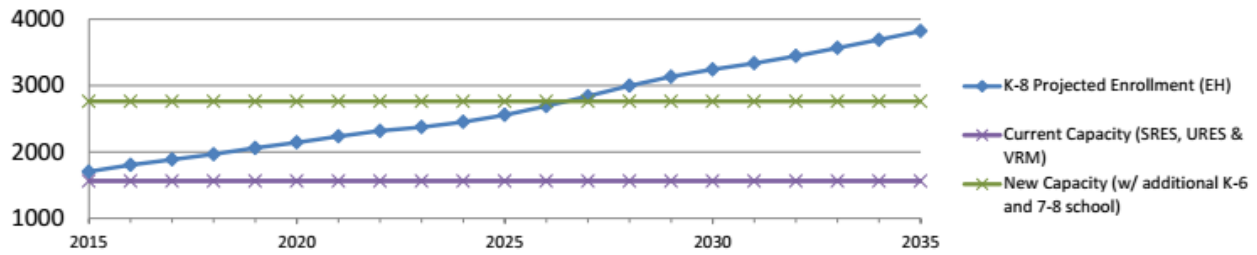
Baseline Growth

Option 2) Replace a Classroom Pod at Ridgefield HS



Baseline Growth

Option 3) Build a New K-6 and New 7-8



16.2.3 Assets

Table 16-1 summarizes the critical assets of the district and their value.

Table 16-1. Special Purpose District Assets

Asset	Value
Property	
57.3 square miles	\$2.7 billion
Critical Infrastructure and Equipment	
District vehicle (x2)	\$10,000 each
Athletic van (x3)	\$7,500 each
Maintenance vehicle - van	\$12,000
Maintenance vehicle - van	\$12,000
Maintenance vehicle - van	\$12,000
Maintenance vehicle - truck	\$15,000
Total:	\$93,500
Critical Facilities	
South Ridge Elementary School	\$7,061,200

Union Ridge Elementary School	\$14,732,875
View Ridge Middle School / Sunset Ridge Intermediate	\$31,387,281
Ridgefield High School	\$24,241,800
Wisdom Ridge Academy	Leased
District office	\$14,729,635
Total^a	\$92,152,791

16.3 PLANNING AND REGULATORY CAPABILITIES

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

More information on these plans can be found - <http://www.ridgefieldsd.org/about-us/board-of-directors/policies-and-procedures>

Capital Facilities Plan (6900)

Risk Management Program (6500)

Site Acquisition (6905)

Ridgefield School District Safety Committee

16.4 FISCAL, ADMINISTRATIVE AND TECHNICAL CAPABILITIES

An assessment of fiscal capabilities is presented in Table 16-2. An assessment of administrative and technical capabilities is presented in Table 16-3.

Table 16-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers (GMA)	Yes
Other	No

Table 16-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Outside consultant(s)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Maintenance director LSW Architects
Planners or engineers with an understanding of natural hazards	Yes	LSW Architects
Staff with training in benefit/cost analysis	Yes	LSW Architects
Surveyors	Yes	Outside consultant(s)
Personnel skilled or trained in GIS applications	Yes	Outside consultant(s)
Scientist familiar with natural hazards in local area	Yes	Outside consultant(s)
Emergency manager	Yes	Maintenance director, principals, superintendent

Staff/Personnel Resources	Available?	Department/Agency/Position
Grant writers	Yes	Federal Programs office
Other	No	

16.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 16-4. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes - Nathan McCann, Superintendent
Do you have personnel skilled or trained in website development?	Yes – Technology Department
Do you have hazard mitigation information available on your website?	No
<ul style="list-style-type: none"> If yes, please briefly describe. 	
Do you utilize social media for hazard mitigation education and outreach?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	We posted a link to the initial hazard mitigation plan public survey on the district website and used the district email system to notify parents of our activities.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
<ul style="list-style-type: none"> If yes, please briefly specify. 	
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	The district has a safety committee that meets four times a year. Information related to the plan could be shared with this group. The group would then take the material back to their buildings to share with all staff members.
Do you have any established warning systems for hazard events?	Yes
<ul style="list-style-type: none"> If yes, please briefly describe. 	Building intercom and phone systems. Additionally, flash alerts can be sent.

16.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into existing plans and programs.

16.6.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- Emergency Operations Plan—the District is currently in the process of revising and updating the Emergency Operations Plan. As part of this process the Ridgefield School District has been working with CRESA, the Ridgefield Police Department and Clark County Fire & Rescue. We have planned an RRAT exercise to take place on January 14th. Once completed, the district will take the lessons learned and apply them to our plan. Additionally, we will discuss and include the hazard mitigation plan.

16.6.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- The Ridgefield School District is working with Clark County school districts regarding an area wide adoption of the Standard Response Protocol and Standard Reunification Plan (<http://www.iloveguys.org/>).
- The Ridgefield School District Safety Committee will be kept apprised of the District’s progress on the implementation and maintenance of the hazard mitigation plan.

16.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 16-5 lists all known, past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Eruption	623	5/80	\$0
Severe Winter Weather	Governor Proclamation 17.01 & 17.02	12/8, 12/9, 12/15, 1/11-1/13, 1/17	\$0 - School Closure
Severe Winter Weather	4253	12/15	\$0 - School Closure, Interstate 501 lane closure
Severe Winter Weather	N/A	2/7/14 and 2/10/14	\$0- School Closure, Interstate 501 lane closure
Severe Winter Weather	N/A	12/10/13 and 12/11/13	\$0- School Closure, Interstate 501 lane closure
Severe Winter Weather	N/A	1/18/12	\$0- School Closure
Severe Winter Weather	N/A	2/24/11	\$0- School Closure
Severe Winter Weather	N/A	11/23/10	\$0- School Closure

16.8 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities the jurisdiction include:

- Many of the core district facilities have not been seismically retrofitted.

16.9 HAZARD RISK RANKING

Table 16-6 presents the ranking of the hazards of concern.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	51	High
3	Earthquake	36	High
4	Landslide	24	Medium
5	Flood	16	Medium
6	Dam Failure	9	Low
7	Drought	8	Low
8	Volcano (ash fall)	8	Low

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
9	Wildfire	0	None

16.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 16-8 lists the actions that make up the Ridgefield School District hazard mitigation action plan. Table 16-9 identifies the priority for each action. Table 16-10 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 16-7. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
RSD-1 —Ridgefield School District has many older facilities that were not designed with seismic activity in mind. Perform non-structural retrofits on all facilities.						
Existing	Earthquake	9,10	Ridgefield School District - Maintenance	Medium	General fund - maintenance	Short term
RSD-2 —Purchase back-up generators for facilities (Union Ridge, South Ridge, Ridgefield High School).						
Existing	All hazards	2, 3, 10	Ridgefield School District - Maintenance	High	HMGP, PDM	Short term
RSD-3 —Retro fit all brick buildings for seismic activity (Union Ridge, South Ridge, Ridgefield High School).						
Existing	Earthquake	9, 10	Ridgefield School District - Maintenance and Contractor	High	HMGP, PDM	Long term
RSD-4 —Work with local agencies to identify a standard Reunification Site for use by all schools when evacuation of school facilities is necessary. Currently working with CRESA, Ridgefield Police, Clark County Fire & Rescue, Clark County Sheriff.						
N/A	All hazards	1, 4	Ridgefield School District, Ridgefield Police Department, Clark County Fire & Rescue, Clark County Event Center	Low	General fund	Short term
RSD-5 —Share the Hazard Mitigation work with the school board during a public meeting.						
N/A	All hazards	1	Ridgefield School District	Low	Staff time	Short term
RSD-6 Support the County –wide initiative in Volume I of the hazard mitigation plan.						
New and Existing	All hazards	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Lead contact Department for Plan	Low	Staff Time, General Funds	Short-term
RSD – 7 Actively participate in the plan maintenance strategy outlined in Volume I of the hazard mitigation plan.						
New and Existing	All hazards	1, 4	Lead Contact Department for Plan	Low	Staff Time, General Funds	Short-term

Table 16-8. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority ^a	Grant Priority ^a
1	2	High	Medium	Yes	No	Yes	High	Low
2	3	High	High	Yes	Yes	No	Low	High
3	2	High	High	Yes	Yes	No	Low	High
4	2	High	Low	Yes	No	Yes	High	Low
5	5	Low	Low	Yes	No	Yes	Medium	Low
6	12	Low	Low	Yes	No	Yes	High	Low
7	2	Low	Low	Yes	No	Yes	High	Low

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

Table 16-9. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Severe Weather	RSD-1, RSD-2, RSD-3	RSD-1, RSD-2, RSD-3	RSD-5		RSD-4, RSD-5	RSD-3
Earthquake	RSD-1, RSD-3	RSD-1, RSD-3	RSD-5			RSD-3
Landslide		RSD-2	RSD-8			
Flood		RSD-2	RSD-8			
Dam Failure		RSD-2	RSD-8			
Drought		RSD-2	RSD-8			
Volcano (ash fall)		RSD-2	RSD-8			

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

16.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Ridgefield School District will continue to partner with the City of Ridgefield considering long term planning in regards to traffic impact.

16.12 ADDITIONAL COMMENTS

As the Ridgefield School District continues to grow, we will take into consideration potential hazards when designing new construction.

17. EVERGREEN PUBLIC SCHOOLS

17.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Shane Gardner, Director of Safety/Security
13413 NE LeRoy Haagen Memorial Drive
Vancouver, WA 98668-8910
Telephone: 360-604-4066
Email address: shane.gardner@evergreenps.org

Alternate Point of Contact

Kyle Olsen, Manager of Safety and Security
13413 NE LeRoy Haagen Memorial Drive
Vancouver, WA 98668-8910
Telephone: 360-604-4065
Email address: kyle.olsen@evergreenps.org

17.2 JURISDICTION PROFILE

17.2.1 Overview

The purpose of Evergreen Public Schools Hazard Mitigation Plan is to reduce the impacts of future natural disasters on the district's facilities, students, staff and volunteers. That is, the purpose is to make the Evergreen Public Schools more disaster resistant and disaster resilient, by reducing the vulnerability to disasters and enhancing the capability to respond effectively to, and recover quickly from, future disasters.

Completely eliminating the risk of future disasters in Evergreen Public Schools is neither technologically possible nor economically feasible. However, substantially reducing the negative impacts of future disasters is achievable with the adoption of this pragmatic Hazard Mitigation Plan and ongoing implementation of risk reducing action items. Incorporating risk reduction strategies and action items into the district's existing programs and decision making processes will facilitate moving the Evergreen Public Schools toward a safer and more disaster resistant future.

Evergreen Public Schools Hazard Mitigation Plan is based on a four-step framework that is designed to help focus attention and action on successful mitigation strategies: Mission Statement, Goals, Objectives, and Action Items.

Mission Statement. The Mission Statement states the purpose and defines the primary function of the Evergreen Public Schools Hazard Mitigation Plan. The Mission Statement is an action-oriented summary that answers the question "Why develop a hazard mitigation plan?"

Goals. Goals identify priorities and specify how Evergreen Public Schools intends to work toward reducing the risks from natural and human-caused hazards. The Goals represent the guiding principles toward which the district's efforts are directed. Goals provide focus for the more specific issues, recommendations, and actions addressed in Objectives and Action Items.

Objectives. Each Goal has Objectives which specify the directions, methods, processes, or steps necessary to accomplish the Evergreen Public Schools Hazard Mitigation Plan's Goals. Objectives lead directly to specific Action Items.

Action Items. Action Items are specific, well-defined activities or projects that work to reduce risk. That is, the Action Items represent the specific, implementable steps necessary to achieve the district's Mission Statement, Goals, and Objectives.

The mission statement for Evergreen Public Schools Hazard Mitigation Plan is to:

Proactively facilitate and support district-wide policies, practices, and programs that make Evergreen Public Schools more disaster resistant and disaster resilient.

Making Evergreen Public Schools more disaster resistant and disaster resilient means taking proactive steps and actions to:

- Protect life safety,
- Reduce damage to district facilities,
- Minimize economic losses and disruption, and
- Shorten the recovery period from future disasters.

17.2.2 SERVICE AREA AND TRENDS

Evergreen has expanded and refined its educational programs as the 54 square mile district rapidly developed and added population in recent years. In the spring of 2004, the school board endorsed the use of the name Evergreen Public Schools as an alternative to the official name of Evergreen School District #114. Using the name Evergreen Public Schools reflects the ownership each member of the community has in its school district. It also better captures the cooperative environment that the district nurtures.

Evergreen Public Schools provides the academic, cultural, vocational, and athletic programs needed to help students become responsible, knowledgeable adults.

Evergreen Public Schools currently serves 22,921 students and employs 2,203 employees. Our budget for the school year 2021/2022 is \$406,945,000. Student enrollment is as follows in the table below.

17.2.3 ASSETS

Table 17-1 summarizes the critical assets of the district and their value.

Table 17-1. Special Purpose District Assets

Asset	Description	Street Address	Value	Sq. Ft.
Critical Facilities				
HeLa High School	BioScience Academy H.S.	9105 NE 9th St	\$19,800,000.00	69,008
Columbia Valley Elementary School	Covered play structure	17500 SE Sequoia Circle	\$275,000.00	3,200

Orchards Elementary School	Covered play structure	11405 NE 69th Street	\$275,000.00	3,200
York Elementary School	Covered play structure	9301 NE 152nd Ave	\$275,000.00	3,200
Emerald Elementary School	Detached Play	4000 NE 164th Ave	\$250,000.00	3,200
Image Elementary	Detached Play	5201 NE 131st Ave	\$250,000.00	3,200
Marion Elementary School	Elementary Building	10119 NE 14th St	\$23,485,000.00	62,000
Quad 205 Storage	Warehouse Storage	10914 NE 39th St, Ste B4	\$0.00	4,550
Land	Vacant Land	2224 NE Brendan Circle	\$0.00	1
Sifton Elementary	Detached Covered Play Area	7301 NE 137th Ave	\$102,080.00	3,200
Emerald Elementary School	School Building	4000 NE 164th Ave	\$23,485,000.00	61,000
Fircrest Elementary School	Attached Covered Play Structure	12001 NE 9th Street	\$11,000.00	4,500
Illahee Elementary	Portables (3)	19401 SE 1st Street	\$517,440.00	4,704
Harmony Elementary	Building	17404 A NE 18th Street	\$14,170,475.00	49,519
Hearthwood Elementary	Portables (2)	801 NE Hearthwood Blvd	\$689,920.00	3,136
Evergreen High School	Portables (8)	14300 NE 18th ST	\$1,512,280.00	13,748
Covington Middle School	Portable Quad 2 Modular	11200 NE Rosewood Road	\$1,143,890.00	8,064
Burton Elementary	Attached Covered Play Structure	14015 NE 28th St	\$11,000.00	1,500
Endeavour Elementary School	Attached Covered Play Structure	2701 NE Four Seasons Lane	\$11,000.00	2,200

Crestline Elementary	2 attached Covered Play Structures	13003 SE 7th St	\$22,000.00	3,761
Old Legacy High School	Legacy High School	2205 NE 138th Ave	\$3,240,897.00	11,554
49th Street Academy	K-13 Special Needs Students	14619-B 49th Street	\$176,000.00	1,568
Harmony Elementary	Attached Covered Play Structure	17404 A NE 18th Street	\$11,000.00	4,020
Mckenzie Stadium	Athletic Light Standards	14300 NE 18th St	\$132,084.00	0
Vacant Land	Haagen Vacant Land 22.47 acres	136th Ave & N side of Mill Plain	\$0.00	0
York Elementary School	Attached Covered Play Structure	9301 NE 152nd Ave	\$11,000.00	2,200
Sunset Elementary School	Attached Covered Play Structure	9001 NE 95th St	\$11,000.00	4,500
Shahala Middle School	Freestanding Covered Play Area	601 SE 192nd Ave	\$11,000.00	3,224
Riverview Elementary	Storage Shed	12601 Se Riveridge Dr	\$41,250.00	500
Riverview Elementary	Attached Covered Play Structure	12601 Se Riveridge Dr	\$11,000.00	4,500
Pioneer Elementary	Attached Covered Play Structure	7212 NE 166th Ave	\$11,000.00	4,020
Orchards Elementary	Attached Covered Play Structure	11405 NE 69th Street	\$11,000.00	2,200
Image/Home Choice Academy	Attached Covered Play Structure	4400 Ne 122nd Ave	\$11,000.00	4,500
Illahee Elementary	Attached Covered Play Structure	19401 SE 1st Street	\$11,000.00	4,016
Hearthwood Elementary	Modular Building (1)	801 NE Hearthwood Blvd	\$418,000.00	4,608

Mckenzie Stadium	Athletic Storage	2205 NE 138th Ave	\$19,763.00	1
Pacific Middle School	Athletic Storage Shed	2017 NE 172nd Ave	\$21,942.00	500
Burnt Bridge Creek Elementary	Building	14619 A NE 49th St	\$14,025,000.00	49,414
Illahee Elementary	Elementary School	19401 SE 1st Street	\$16,090,800.00	55,699
Silver Star Elementary	Covered Play Area	14300 NE 18th ST	\$247,500.00	1,728
Fisher's Landing Elementary	Attached Covered Play Structure	3800 SE Hiddenbrook Drive	\$330,000.00	4,010
Fisher's Landing Elementary	Building	3800 SE Hiddenbrook Dr	\$14,093,750.00	49,972
Archway Academy	Archway Academy	13500 NE 9th Street	\$4,389,825.00	9,535
Legacy High School and New Hollingsworth Academy/49th Street Academy	Legacy High School and New Hollingsworth Academy/49th Street Academy	13300 NE 9th Street and 13400 NE 9th Street	\$28,587,075.00	60,655
Image Elementary	Image Elementary School Building	5201 NE 131st Ave	\$23,485,000.00	61,000
Cascadia Tech Building Lot	0	2213 NE Brendan Circle	\$0.00	1
Old Legacy High School	Portables (2)	2205 NE 138th Ave	\$357,500.00	3,144
Old Legacy High School	Modular Building	2205 NE 138th Ave	\$440,000.00	5,180
Harmony Elementary	Storage Shed	17404 A NE 18th Street	\$55,000.00	500
Hearthwood Elementary School	Attached Covered Play Structure	801 NE Hearthwood Blvd	\$11,000.00	4,500
Heritage High School	Field house Storage	7825 NE 130th Ave	\$110,000.00	500
Illahee Elementary	Storage Shed	19401 SE 1st Street	\$41,250.00	500

Image/Home Choice Academy	Storage Shed	4400 NE 122nd Ave	\$41,250.00	500
Frontier Middle School	Storage Shed	7600 NE 166th Ave	\$41,250.00	500
Orchards Elementary	2 Portables	11405 NE 69th Street	\$495,000.00	3,136
Fisher's Landing Elementary	Storage Shed	3800 SE Hiddenbrook Dr	\$41,250.00	500
Sunset Elementary School	Storage Shed	9001 NE 95th St	\$41,250.00	500
Union High School	Quad/Modular	6201 NW Friberg	\$1,281,280.00	11,648
Orchards Elementary	Modular Building	11405 Ne 69th Street	\$554,400.00	5,040
Image Elementary	Building	4400 NE 122nd Ave	\$15,578,750.00	54,400
Cascade Middle School	Covered Play Structure	13900 NE 18th Street	\$99,000.00	6,570
Cascadia Technical Academy	Cosmetology Building 600	12200 NE 28th ST	\$2,145,000.00	7,071
Shahala Middle School	Athletic Storage Shed	601 SE 192nd	\$59,400.00	720
Frontier Middle School	Portables (11) - Age Varies	7600 NE 166th Ave	\$1,897,280.00	17,248
Ellsworth Elementary	Detached Play	512 SE Ellsworth Ave	\$250,000.00	3,200
Shahala Middle School	Portables (12) - Age Varies	601 SE 192nd Ave	\$2,069,760.00	18,816
Shahala Middle School	Middle School	601 SE 192nd Ave	\$29,430,060.00	104,298
Mckenzie Stadium	Portable Stage	2205 NE 138th Ave	\$54,053.00	1
Fircrest Elementary School	Building	12001 NE 9th Street	\$15,578,750.00	54,400
Pacific Middle School	Portables (19) - Age Varies	2017 NE 172nd Ave	\$3,277,120.00	29,792

Burton Elementary	Buildings 100-300	14015 NE 28th St	\$11,382,800.00	40,642
Mckenzie Stadium	Restrooms	2205 NE 138th Ave	\$36,038.00	1
Evergreen High School	Tennis Court Surface	14300 NE 18th ST	\$38,508.00	1
Covington Middle School	5 Portable - See EPS detail for correct ages of portables	11200 NE Rosewood Road	\$862,400.00	7,840
Frontier Middle School	Recycle Shed	7600 NE 166th Ave	\$27,500.00	300
Riverview Elementary	Portables (2)	13900 NE 18th ST	\$344,960.00	3,136
Fisher's Landing Elementary	Portables (6) - Age Varies	3800 Se Hiddenbrook Drive	\$1,034,880.00	9,408
Burnt Bridge Creek Elementary	Portables (6)	14619 A NE 49th Street	\$990,000.00	9,408
Covington Middle School	Storage Building	11200 NE Rosewood Road	\$99,000.00	1,000
Endeavour Elementary School	4 Portables - Age Varies	2701 NE Four Seasons Lane	\$703,120.00	6,272
Fircrest Elementary School	Storage Shed	12001 NE 9th Street	\$41,250.00	500
Crestline Elementary	School Building	13003 SE 7th St	\$18,650,500.00	60,143
Cascade Middle School	Portables (2) portable quad 1	13900 NE 18th Street	\$1,254,000.00	11,200
Crestline Elementary	Detached Play Structure	13003 SE 7th St	\$115,500.00	3,634
Transportation	Building	13909 NE 28th ST	\$1,650,000.00	9,170
Cascade Middle School	Athletic Storage Building	13900 NE 18th ST	\$99,000.00	1,000
Burton Elementary	Portables 7	14015 NE 28th St	\$1,320,000.00	10,976

Harmony Elementary - Age Varies	Portables (8)	17404 A NE 18th Street	\$1,375,000.00	12,544
Maintenance	Building (Including storage)	3004 NE 124th Ave	\$1,155,000.00	7,000
Sifton Elementary	Sifton Elementary School	7301 NE 137th Ave	\$23,485,000.00	61,600
Maintenance	Storage Buildings (2)	unknown	\$742,500.00	6,750
Frontier Middle School	Buildings 100-300	7600 NE 166th Ave	\$27,545,100.00	101,046
York Elementary School	York Elementary School	9301 NE 152nd Ave	\$15,732,200.00	56,108
Heritage High School	Greenhouse	7825 NE 130th Ave	\$85,800.00	1,200
Heritage High School	Portables (15) - Age Varies	7825 NE 130th Ave	\$3,449,600.00	23,520
Pioneer Elementary	Building	7212 NE 166th Ave	\$14,170,530.00	49,519
Hearthwood Elementary School	Storage Shed	801 NE Hearthwood	\$41,250.00	500
Silver Star Elementary	Attached Covered Play Structure	10500 NE 86th St	\$115,500.00	3,634
Pacific Middle School	Covered Play Area	2017 NE 172nd Ave	\$115,500.00	2,946
Image/Home Choice Academy	Portables (3) - Age Varies	4400 Ne 122nd Ave	\$689,920.00	4,704
Silver Star Elementary	Portables (7)	10500 NE 86th St	\$1,207,360.00	10,976
Silver Star Elementary	Building/Gym	10500 NE 86th St	\$13,591,600.00	41,463
Burton Elementary	Freestanding Covered Play Area	14015 NE 28th St	\$115,500.00	3,634
49th Street Academy	Leased Location - Property Coverage Only	14619-B 49th Street	\$2,970,000.00	10,799

Phone Switch Station	Building	13905 NE 28th ST	\$166,320.00	840
Crestwood Business Park	Leased Classroom Space	11818 SE Mill Pl Blvd Suite 302	\$0.00	2,642
Frontier Middle School	Greenhouse	7600 NE 166th Ave	\$44,000.00	1,200
Cascadia Technical Academy	Aviation Building 500	12200 NE 28th ST	\$4,031,500.00	13,318
Burnt Bridge Creek Elementary	Grounds Shed	14619 A NE 49th Street	\$41,250.00	500
Burton Elementary	Storage Shed	14015 NE 28th Street	\$27,500.00	200
Pioneer Elementary	Portables (6) - Age Varies	7212 NE 166th Ave	\$1,034,880.00	9,408
Fircrest Elementary School	Portables (2) - age varies	12001 NE 9th Street	\$344,960.00	3,136
Hearthwood Elementary	Building	801 NE Hearthwood Blvd.	\$14,121,250.00	49,100
Sunset Elementary School	Portable (3) - Age Varies	9001 NE 95th ST	\$517,440.00	4,704
Sunset Elementary School	Building	9001 NE 95th ST	\$15,578,750.00	54,400
Endeavour Elementary School	Elementary School	2701 NE Four Seasons Lane	\$16,955,400.00	60,556
Columbia Valley Elementary	Attached Covered Play Structure	17500 SE Sequoia Circle	\$181,500.00	2,200
Columbia Valley Elementary	School Building	17500 SE Sequoia Circle	\$16,955,400.00	60,556
Administrative	Administrative Services Center	13413 NE LeRoy Haagen Memorial Dr.	\$33,000,000.00	75,000
Mckenzie Stadium	Artificial Turf	2205 NE 138th Ave	\$642,952.00	1
Evergreen High School	Building	14300 NE 18th ST	\$78,513,138.00	264,354

Mckenzie Stadium	North Stadium	2205 NE 138th Ave	\$873,770.00	2,000
Mckenzie Stadium	South Stadium	2205 NE 138th Ave	\$5,305,496.00	27,000
Covington Middle School	Building	11200 NE Rosewood Ave	\$33,561,000.00	112,361
Cascadia Technical Academy	Readerboard	12200 NE 28th ST	\$7,267.00	1
Mckenzie Stadium	Lighted Reader Board	2205 NE 138th Ave	\$7,797.00	1
Mckenzie Stadium	Scoreboard	2205 NE 138th Ave	\$23,829.00	1
Cascadia Technical Academy	Light Standards (21)	12200 NE 28th ST	\$110,000.00	1
Heritage High School	Building	7825 NE 130th Ave	\$72,709,678.00	223,557
Transportation	Covered Bus Ports (4)	13909 NE 28th ST	\$2,836,350.00	9,170
Cascadia Technical Academy	Buildings, 100-400 - Building 400 was built in 2004	12200 NE 28th ST	\$23,452,000.00	80,315
Riverview Elementary	Building	12601 SE Riverridge Dr	\$16,201,900.00	54,400
Cascade Middle School	Building	13900 NE 18th ST	\$32,518,200.00	110,315
Mckenzie Stadium	Concessions	2205 NE 138th Ave	\$101,134.00	0
Warehouse	Building	2205 NE 138th Ave	\$2,750,000.00	25,000
Pacific Middle School	Buildings 100-400	2017 NE 172nd Ave	\$27,912,742.00	106,581
Orchards Elementary	School Building	11405 Ne 69th Street	\$17,633,616.00	60,556
Union High School	Building	6201 NW Friberg Strunk St	\$67,181,400.00	234,900
Ellsworth Elementary	Building	512 SE Ellsworth Ave	\$21,350,000.00	61,600

Middle School	Wy'East Middle School	1112 SE 136th Ave	\$47,201,000.00	134,860
Mill Plain Elementary - GL Only	Mill Plain Elementary - GL Only	16200 SE 6th St	\$0.00	1
Wy'East Middle School	Covered Play Structure	1112 SE 136th Ave	\$312,782.00	3,637
Mountain View High School	School Building	1500 SE Blairmont Dr	\$125,734,950.00	279,411
Mountain View High School	Covered Play Structure	1500 SE Blairmont Dr	\$275,000.00	3,200
Burnt Bridge Creek Elementary	Covered Play Structure	14619 NE 49th St	\$148,050.00	4,230
Frontier Middle School	Covered Play Structure	7600 NE 166th Ave	\$126,000.00	3,600
Covington Middle School	Covered Play Structure	11200 NE Rosewood Ave	\$112,000.00	3,200
Evergreen High School	Evergreen Sports Annex Storage Building 1	14300 NE 18th St	\$242,850.00	1,619
Evergreen High School	Evergreen Sports Annex Storage Building 2	14300 NE 18th St	\$242,850.00	1,619
Transportation	Portable 1	13909 NE 28th St.	\$98,560.00	896
Transportation	Portable 2	13909 NE 28th St.	\$172,480.00	1,568
Facility		Site (acres)		
Heritage		46.35		
Old Legacy		6.81		
Mountain View		38.23		
Union		45.75		
CTA		11.91		
ASC		5.97		

Evergreen HS SPorts Annex	18.03
Maintenance Facility	2.57
McKenzie Stadium	6
Transportation	6.77
Warehouse (Central Receiving)	5.71
HaLa	2.89
Evergreen	27.77
New Legacy	6.6
Cascade MS	16.4
Covington MS	21.45
Frontier MS	40.47
Pacific MS	17.18
Shahala MS	34.2 (Combined with Illahee)
Wy'east MS	25
York Elem	11
Sunset Elem	10.11
Silver Star	11.92
Sifton Elem	10.64
Riverview Elem	10.76
Pioneer Elem	47.24
Orchards Elem	11.81
Mill Plain Elem	8.64
Marrion Elem	16.02
ImageElem	20.94
Temp HCA (Old Image)	15.61
Illlahee Elem	Combined with Shahala
Hearthwood Elem	10.97
Harmony Elem	13.7
Fisher's Landing Elem	11.69
Fircrest Elem	11.16
ESD 112 Pre-K	2.71
Endeavor Elem	8.86

Emerald Elem	9.43
Ellsworth Elem	10.14
Crestline Elem	10.77
Columbia Valley Elem	11.58
New Burton	17.4
Burton Elem	15.36
Burnt Bridge Creek Elem	10.41

17.3 PLANNING AND REGULATORY CAPABILITIES

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

- RCW 28A – Common School Provisions
- WAC Title 392 – Office of Superintendent of Public Instruction
- ABC School District Resources
- School Board
- Superintendent
- Parent Teacher Association
- Teachers Association/Union
- Safety committee
- Office of Superintendent of Public Instruction
- Washington State School Directors’ Association - WSSDA
- Washington Association of School Administrators - WASA
- Washington Association of School Business Officials – WASBO
- Washington Association of Maintenance and Operation Administrators – WAMOA
- Rapid Responder System
- Education Service District - 112
- Clark County, including Emergency Management, Public Works and GIS, Planning Department and Building Officials.
- Cities: Vancouver including Emergency Management, Public Works and GIS, Planning Department and Building Officials
- Vancouver Fire Department
- Clark County Sheriff
- Vancouver Police Department
- Safe Schools Task Force
- Evergreen School District Capabilities
- District Website
- School Closure Telephone Plan
- Evacuation Plan
- Lockdown Plan
- Fire Drills
- Earthquake Drills
- Tornado Drills
- Bomb Threat Assessment Guide

- Emergency Response Plan
- Capital Facilities Plan
- Five Year Plan
- Strategic Plan
- Policies and Procedures
- Student Rights and Responsibilities
- District Safety Plan
- Regional Capabilities
- Clark County Hazard Mitigation Plan and Emergency Response Plan

17.4 FISCAL, ADMINISTRATIVE AND TECHNICAL CAPABILITIES

An assessment of fiscal capabilities is presented in Table 1-2. An assessment of administrative and technical capabilities is presented in Table 1-3.

Table 17-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	NA
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes - Impact Fees
Other	NA

Table 17-3. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Operations Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Operations Department
Planners or engineers with an understanding of natural hazards	Yes	Operations Department
Staff with training in benefit/cost analysis	Yes	Facilities Department / Fiscal Services
Surveyors	No	NA
Personnel skilled or trained in GIS applications	Yes	Facilities Department
Scientist familiar with natural hazards in local area	No	NA
Emergency manager	Yes	Operations Department
Grant writers	No	NA
Other	No	NA

17.5 EDUCATION AND OUTREACH CAPABILITIES

An assessment of education and outreach capabilities is presented in Table 1-4.

Table 17-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes

Criteria	Response
Do you have hazard mitigation information available on your website? <ul style="list-style-type: none"> If yes, please briefly describe. 	No
Do you utilize social media for hazard mitigation education and outreach? <ul style="list-style-type: none"> If yes, please briefly describe. 	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <ul style="list-style-type: none"> If yes, please briefly specify. 	No
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, please briefly describe. 	Yes Flash alert, Social Media, Robo Calls, email, websites
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, please briefly describe. 	Yes Easy Alert, Website, Social Media, Robo Call

17.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction’s process for integrating the hazard mitigation plan into existing plans and programs.

17.6.1 EXISTING INTEGRATION

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- 17.6.1.1EPS Hazard Mitigation Plan 2022.

17.6.2 OPPORTUNITIES FOR FUTURE INTEGRATION

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- 17.6.2.1Long Range Facility Plan
- 17.6.2.2Board of Directors Strategic Plan
- 17.6.2.3Capital Facilities Plan

17.7 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-5 lists all past occurrences of natural hazards within the jurisdiction.

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
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Severe Winter Storm, Straight Line Winds, Flooding, Landslides, Mudslides and a Tornado	DR-5253	December 1, 2015	NA
Severe Winter Storm and Record and Near Record Snow	DR-1825	December 12, 2008	NA
Severe Winter Storm, Landslides, and Mudslides	DR-1682	December 14, 2006	NA
Severe Winter Storms, Flooding	DR-1159	December 26, 1996	NA
Volcanic Eruption, Mount St. Helens	DR-623	May 21, 1980	NA
Dole Valley Fire	NA	1929	NA
Yacolt Burn	NA	1903	\$13,000,000

17.8 JURISDICTION-SPECIFIC VULNERABILITIES

Noted vulnerabilities the jurisdiction include:

- Older facilities may not have been built to modern seismic standards.
- Snow routes for school buses have not been designated.

17.9 HAZARD RISK RANKING

Table 1-6 presents the ranking of the hazards of concern.

Table 17-6. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe Weather	18	Medium
2	Earthquake	16	Medium
3	Landslide	15	Medium
4	Wildfire	7	Low
5	Volcano	3	Low
6	Flood	2	Low
7	Dam Failure	0	None
7	Dan Failure	0	None

17.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-7 lists the actions that make up the battle ground public schools hazard mitigation action plan. Table 1-8 identifies the priority for each action. Table 1-9 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 17-7. Hazard Mitigation Action Plan Matrix

Hazard	Action Item	Timeline	Source of funds	Responsible Person	Plan Goals Addressed	
					Life Safety	Protect Facilities
Earthquake Mitigation Action Items						

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Short-Term #1	Complete seismic evaluations of the roof truss systems at Image, Sunset and Fircrest elementary schools	1 Year	District funds or grants	Facilities Director	X	X
Short-Term #2	Complete seismic evaluations of the foundations of the District's 172 portables.	1-2 Years	District funds or grants	Facilities Director	X	X
Short-Term #3	Complete ASCE 41-13 Tier 1 evaluations of buildings identified as Pre-Code and/or as Risk Level and Priority for Evaluation of "Moderate" or higher.	1-5 Years	District funds or grants	Facilities Director	X	X
Short-Term #4	Assess the ASCE 41-13 results and select buildings that have the greatest vulnerability for more detailed evaluations.	1-5 Years	District funds or grants	Facilities Director	X	X
Short-Term #5	Evaluate nonstructural seismic vulnerabilities in the District's buildings from building elements and contents that pose significant life safety risk (falling hazards) and mitigate by bracing, anchoring or replacing identified high risk items.	1-5 years	District funds or grants	Facilities Director	X	X
Long-Term #1	Prioritize and implement structural seismic retrofits or replacements based on the results of the seismic evaluations completed under the Short-Term Action Items #1 to #4 listed above, as funding becomes available.	Ongoing	District funds or grants	Facilities Director	X	X
Long-Term #2	Maintain and update building data for seismic risk assessments in the OSPI ICOS PDM database.	Ongoing	District funds or grants	Facilities Director	X	
Long-Term #3	Enhance emergency planning for earthquakes including duck and cover and evacuation drills.	Ongoing	District funds or grants	Facilities Director	X	
Long-Term #4	Post seismic evaluation training of maintenance staff	Ongoing	District funds or grants	Facilities Director	X	

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Hazard	Action Item	Timeline	Anticipated funding source	Responsible Person or Department	Plan Goals Addressed			
					Life Safety	Protect Facilities	Enhance Emergency Planning	Enhance Awareness and Education
Multi-Hazard Mitigation Action Items								
Long-Term #1	Integrate the findings and action items in the mitigation plan into ongoing programs and practices for the district.	Ongoing	District	Facilities / Risk Management	X	X	X	X
Long-Term #2	Review emergency and evacuation planning to incorporate hazard and risk information from the mitigation plan.	Ongoing	District	Risk Management	X	X	X	X
Long-Term #3	Consider natural hazards whenever siting new facilities and locate new facilities outside of high hazard areas.	Ongoing	District	Facilities	X	X	X	X
Long-Term #4	Ensure that new facilities are adequately designed to minimize risk from natural hazards.	Ongoing	District/State	Facilities	X	X	X	X
Long-Term #5	Maintain, update and enhance facility data and natural hazards data in the ICOS database.	Ongoing	District	Facilities	X	X	X	X
Long-Term #6	Develop and distribute educational materials regarding natural hazards, vulnerability and risk for K-12 facilities.	Ongoing	District	Risk Management	X		X	X
Long-Term #7	Seek FEMA funding for repairs if district facilities suffer damage in a FEMA declared disaster.	Ongoing	District	Facilities / Maintenance / Risk Management	X	X		X
Long-Term #8	Pursue pre- and post-disaster mitigation grants from FEMA and other sources.	Ongoing	District	Facilities / Risk Management	X	X		X

Long-Term #9	Post the district's mitigation plan on the website and encourage comments stakeholders for the ongoing review and periodic update of the mitigation plan.	Ongoing	District	Community Relations	X			X
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Table 17-8. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Implementation Priority	Grant Priority

a. See above table.

Table 17-9. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects

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

17.10.1 PRIORITIZATION OF MITIGATION PROJECTS

Prioritization of future mitigation projects within the Evergreen School District requires flexibility because of varying types of projects, district needs, and available funding sources. Prioritized mitigation Action Items developed during the mitigation planning process are summarized in Chapter 4. Additional mitigation Action Items or revisions to the initial Action Items are likely in the future. The Evergreen School District Board will make final decisions about implementation and priorities with inputs from district staff, the mitigation planning team, the public, and other stakeholders.

Evergreen Public School’s prioritization of mitigation projects will include the following factors:

- The mission statement and goals in the Evergreen School District Hazard Mitigation Plan including:
 - Goal 1: Reduce Threats to Life Safety,
 - Goal 2: Reduce Damage to District Facilities, Economic Losses, and Disruption of the District’s Services,
 - Goal 3: Enhance Emergency Planning, Disaster Response, and Disaster Recovery, and
 - Goal 4: Increase Awareness and Understanding of Natural Hazards and Mitigation
- Benefit-cost analysis to ensure that mitigation projects are cost effective, with benefits exceeding

the costs.

- The STAPLEE process to ensure that mitigation Action Items under consideration for implementation meet the needs and objectives of the District, its communities, and citizens, by considering the social, technical, administrative, political, economic, and environmental aspects of potential projects.

Cost Effectiveness of Mitigation Projects

As Evergreen Public Schools considers whether or not to undertake specific mitigation projects or evaluate how to decide between competing mitigation projects, they must address questions that don't always have obvious answers, such as:

- What is the nature of the hazard problem?
- How frequent and how severe are the hazard events of concern?
- Do we want to undertake mitigation measures?
- What mitigation measures are feasible, appropriate, and affordable?
- How do we prioritize between competing mitigation projects?
- Are our mitigation projects likely to be eligible for FEMA funding?

Evergreen Public Schools recognizes that benefit-cost analysis is a powerful tool that can help provide solid, defensible answers to these difficult socio-political-economic-engineering questions. Benefit-cost analysis is required for all FEMA-funded mitigation projects, under both pre-disaster and post-disaster mitigation programs.

However, regardless of whether or not FEMA funding is involved, benefit-cost analysis provides a sound basis for evaluating and prioritizing possible mitigation projects for any natural hazard. Thus, the district will use benefit-cost analysis and related economic tools, such as cost-effectiveness evaluation, to the extent practicable in prioritizing and implementing mitigation actions.

17.10.2 STAPLEE PROCESS

Evergreen Public Schools will also use the STAPLEE methodology to evaluate projects based on the Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) considerations and opportunities for implementing particular mitigation action items in the district. The STAPLEE approach is helpful for doing a quick analysis of the feasibility of proposed mitigation projects.

The following paragraphs outline the district's STAPLEE approach

17.10.3 SOCIAL:

- Is the proposed action socially acceptable to the community?
- Are there equity issues involved that would mean that one segment of the community is treated unfairly?
- Will the action cause social disruption?

17.10.4 TECHNICAL:

- Will the proposed action work?
- Will it create more problems than it solves?
- Does it solve a problem or only a symptom?
- Is it the most useful action in light of other goals?

17.10.5 ADMINISTRATIVE:

- Is the action implementable?
- Is there someone to coordinate and lead the effort?
- Is there sufficient funding, staff, and technical support available?
- Are there ongoing administrative requirements that need to be met?

17.10.6 POLITICAL:

- Is the action politically acceptable?
- Is there public support both to implement and to maintain the project?
- **Legal:** Include legal counsel, land use planners, and risk managers in this discussion.
- Who is authorized to implement the proposed action?
- Is there a clear legal basis or precedent for this activity?
- Will the district be liable for action or lack of action?
- Will the activity be challenged?

17.10.7 ECONOMIC:

- What are the costs and benefits of this action?
- Do the benefits exceed the costs?
- Are initial, maintenance, and administrative costs taken into account?
- Has funding been secured for the proposed action? If not, what are the potential funding sources (public, non-profit, and private)?
- How will this action affect the fiscal capability of the district?
- What burden will this action place on the tax base or economy?
- What are the budget and revenue effects of this activity?

17.10.8 ENVIRONMENTAL:

- How will the action impact the environment?
- Will the action need environmental regulatory approvals?
- Will it meet local and state regulatory requirements?
- Are endangered or threatened species likely to be affected?

17.10.9 EVERGREEN SCHOOL DISTRICTS CAPABILITIES

Evergreen Public Schools has the necessary human resources to ensure that Evergreen Public Schools Hazard Mitigation Plan continues to be an actively used planning document. District staff has been active in the preparation of the Plan, and have gained an understanding of the process and the desire to integrate the Plan into ongoing capital budget planning. Through this linkage, the district's Hazard Mitigation Plan will be kept active and be a working document.

District staff have broad experience with planning and facilitation of community inputs. This broad experience is directly applicable to hazard mitigation planning and to implementation of mitigation projects. If specialized expertise is necessary for a particular project, the district will contract with a consulting firm on an as-needed basis.

Furthermore, recent earthquake and tsunami disasters worldwide serve as a reminder of the need to maintain a high level of interest in evaluating and mitigating risk from natural disasters of all types. These events have

kept the interest in hazard mitigation planning and implementation alive among Evergreen Public Schools Board, district staff, and in the communities served by the district.

17.10.10 PLAN MAINTENANCE AND PERIODIC UPDATING

Monitoring Evergreen Public Schools Hazard Mitigation Plan is an ongoing, long-term effort. An important aspect of monitoring is a continual process of ensuring that mitigation Action Items are compatible with the goals, objectives, and priorities established during the development of the district's Mitigation Plan. The district has developed a process for regularly reviewing and updating the Hazard Mitigation Plan. As noted previously, Scott Deutsch, Manager, Risk Management & Safety will have the lead responsibility for implementing Evergreen Public Schools Hazard Mitigation Plan and for periodic monitoring, evaluating, and updating of the Plan. There will be ample opportunities to incorporate mitigation planning into ongoing activities and to seek grant support for specific mitigation projects.

Evergreen Public Schools Hazard Mitigation Plan will be reviewed annually as well as after any significant disaster event affecting the district. These reviews will determine whether there have been any significant changes in the understanding of hazards, vulnerability, and risk or any significant changes in goals, objectives, and Action Items. These reviews will provide opportunities to incorporate new information into the Mitigation Plan, remove outdated items, and document completed Action Items. This will also be the time to recognize the success of the district in implementing Action Items contained in the Plan. Annual reviews will also focus on identifying potential funding sources for the implementation of mitigation Action Items.

The periodic monitoring, evaluation, and updating will assess whether or not, and to what extent, the following questions are applicable:

- Do the plans goals, objectives, and action items still address current and future expected conditions?
- Does the mitigation Action Items accurately reflect the district's current conditions and mitigation priorities?
- Has the technical hazard, vulnerability, and risk data been updated or changed?
- Are current resources adequate for implementing the district's Hazard Mitigation Plan? If not, are there other resources that may be available?
- Are there any problems or impediments to implementation? If so, what are the solutions?
- Have other agencies, partners, and the public participated as anticipated? If no, what measures can be taken to facilitate participation?
- Have there been changes in federal and/or state laws pertaining to hazard mitigation in the district?
- Have the FEMA requirements for the maintenance and updating of hazard mitigation plans changed?
- What can the district learn from declared federal and/or state hazard events in other Washington school districts that share similar characteristics to Evergreen Public Schools, such as vulnerabilities to earthquakes and tsunamis?
- How have previously implemented mitigation measures performed in recent hazard events? This may include assessment of mitigation Action Items similar to those contained in the district's Mitigation Plan, but where hazard events occurred outside of the district.

The District Safety Committee will review the results of these mitigation plan assessments, identify corrective actions, and make recommendations, if necessary, to the Evergreen School Board for actions that may be necessary to bring the Hazard Mitigation Plan back into conformance with the stated goals and objectives. Any major revisions of the Hazard Mitigation Plan will be taken to the Board for formal approval as part of the district's ongoing mitigation plan maintenance and implementation program.

The District Safety Committee will have lead responsibility for the formal updates of the Hazard Mitigation Plan every five years. The formal update process will be initiated at least one year before the five-year

anniversary of FEMA approval of Evergreen Public Schools Hazard Mitigation Plan, to allow ample time for robust participation by stakeholders and the public and for updating data, maps, goals, objectives, and Action Items.

Implementation of the mitigation actions identified in the Plan must continue to engage the entire community. Continued public involvement will be an integral part of the ongoing process of incorporating mitigation planning into land use planning, zoning, and capital improvement plans and related activities within the communities served by the district. In addition, the district will expand communications and joint efforts between the district and emergency management activities in the cities of Vancouver and Clark County.

Evergreen Public Schools is committed to involving the public directly in the ongoing review and updating of the Hazard Mitigation Plan. This public involvement process will include public participation in the monitoring, evaluation, and updating processes outlined in the previous section. Public involvement will intensify as the next 5-year update process is begun and completed.