
3. CITY OF CAMAS

3.1 HAZARD MITIGATION PLAN POINT OF CONTACT

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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.

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.