

1. CITY OF WASHOUGAL

1.1 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

1.2 JURISDICTION PROFILE

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

- Date of Incorporation—1908
- Current Population—15,170 as of April 1, 2015 (2015 OFM estimate)
- Population Growth—Based on OFM data the City of Washougal has seen relatively steady growth with a population increase of nearly 50% from 7,575 in the year 2000 to 15,170 in 2015.
- 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. [GK1]

- 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.

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.

Table 1-1. Legal and Regulatory Capability [GK2]

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code <i>Comment: Washougal Municipal Code 15.04</i>	Yes	No	Yes
Zoning Code <i>Comment: Washougal Municipal Code Title 18</i>	Yes	No	Yes
Subdivisions <i>Comment: Washougal Municipal Code Title 17</i>	Yes	No	Yes
Stormwater Management <i>Comment: Washougal Municipal Code 14.28 and Washougal Engineering Standards Chapter 4</i>	Yes	No	Yes
Post-Disaster Recovery <i>Comment: N/A</i>	No	No	No
Real Estate Disclosure <i>Comment: N/A</i>	No	No	No
Growth Management <i>Comment: RCW 36.70A / City of Washougal Comprehensive Plan</i>	Yes	Yes	Yes
Site Plan Review <i>Comment: Washougal Municipal Code 18.88</i>	Yes	No	No
Environmental Protection <i>Comment: Washougal Municipal Code Title 16</i>	Yes	No	Yes
Flood Damage Prevention <i>Comment: Washougal Municipal Code 16.28</i>	Yes	No	Yes
Emergency Management <i>Comment: Washougal Municipal Code 2.48</i>	Yes	No	Yes
Climate Change <i>Comment: N/A</i>	No	No	No
Other <i>Comment: N/A</i>	No	No	No
General or Comprehensive Plan <i>Is the plan equipped to provide linkage to this mitigation plan?</i> <i>Comment: Washougal Municipal Code 2.48 can be revised to provide linkage, as well as the Comprehensive Plan</i>	Yes	Yes	Yes
Capital Improvement Plan <i>What types of capital facilities does the plan address?</i> <i>How often is the plan updated?</i> <i>Comment: Transportation, Parks, Sewer, Water, Fire. As often as needed but usually amended annually.</i>	Yes	No	Yes
Floodplain or Watershed Plan <i>Comment: N/A</i>	No	No	No
Stormwater Plan <i>Comment: 2014 Stormwater Management Program (SWMP for the City of Washougal)</i>	Yes	No	Yes
Habitat Conservation Plan <i>Comment: N/A</i>	No	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated
Economic Development Plan	Yes	Yes	Yes – dependent on funding
<i>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).</i>			
Shoreline Management Plan	Yes	No	Yes
<i>Comment: The City's SMP is still being developed and reviewed with completion anticipated in 2016.</i>			
Community Wildfire Protection Plan	No	No	No
<i>Comment: N/A</i>			
Forest Management Plan	No	No	No
<i>Comment: N/A</i>			
Climate Action Plan	No	No	No
<i>Comment: N/A</i>			
Other	No	No	No
<i>Comment: N/A</i>			
Comprehensive Emergency Management Plan	Yes	No	Yes
<i>Comment: Washougal Municipal Code 2.48- Emergency Management adopted February 21, 2006.</i>			
Threat & Hazard Identification & Risk Assessment	No	No	No
<i>Comment: N/A</i>			
Post-Disaster Recovery Plan	No	No	No
<i>Comment: N/A</i>			
Continuity of Operations Plan	No	No	No
<i>Comment: N/A</i>			
Public Health Plan	No	No	No
<i>Comment: N/A</i>			

Table 1-2. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants[GK3]	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[GK4]	Yes (Local Improvement District) (LID)
Withhold Public Expenditures in Hazard-Prone Areas[GK5]	No

Financial Resources	Accessible or Eligible to Use?
State-Sponsored Grant Programs [GK6]	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 [GK7]	Yes
Other [GK8]	No

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	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 1-4. 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

Criteria	Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, please state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No, staff has utilized on-line training N/A
Does your jurisdiction participate in the Community Rating System (CRS)? • If so, is your jurisdiction seeking to improve its CRS Classification? • If not, is your jurisdiction interested in joining the CRS program?	No N/A Possibly
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	47 \$14,465,000 \$37,692
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	10 2 \$71,369.59

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

Table 1-5. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System[GK9]	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[GK10]	No	N/A	N/A
Firewise[GK11]	Yes (West End)	Firewise	2009

Table 1-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes – Jennifer Forsberg, 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? • If yes, please briefly describe.	No, but we could
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	Yes We have recently utilized our website, Twitter feed and Facebook page to publicize this update to the Hazard Mitigation Plan.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No

Criteria	Response
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> 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.

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:

- 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[GK12], 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.

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:

- 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 hazard mitigation plan and the 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 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 hazard mitigation plan could be incorporated.

1.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-6 lists all past occurrences of natural hazards within the jurisdiction.

Table 1-6. Natural Hazard Events[GK13]

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[GK14]	1361	Feb. 2001	Undetermined
Severe Storm	1159	Dec. 1996	Undetermined
Severe Storm	1079	Nov. 1995	Undetermined
Volcanic Eruption[GK15]	623	May 1980	Undetermined
Severe Storm	137	Oct. 1962	Undetermined

1.6 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.[GK16]
- 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.

1.7 HAZARD RISK RANKING

Table 1-7 presents the ranking of the hazards of concern.

Table 1-7. Hazard Risk Ranking[GK17]

Ran k	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

1.8 STATUS OF PREVIOUS PLAN INITIATIVES

Table 1-8 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, many of the action items identified were to be led by CRESA or other non-City agencies. For ease of annual progress reporting, these actions have generally been removed from the City’s action plan or rephrased to be within the capabilities of the City. This will allow for a fresh start consistent with the comprehensive update to the hazard mitigation plan conducted during the 2016 planning process.

Table 1-8 Hazard Mitigation Action Plan Matrix[GK18]

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Support voluntary structural retrofitting of older homes on vulnerable soils. <i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			X
Require the retrofitting of older, vulnerable or critical structures located on NEHRP 'E' and 'F' soils. <i>Comment: This objective has not been pursued. With such a small staff (1 Building Official and 1 Inspector) projects like this can be challenging but worthwhile. This objective should be carried over (see WS-1).</i>		X	
Encourage non-structural retrofitting throughout the County. <i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			X
Join the CRS program <i>Comment: While a worthwhile program, the level of commitment and accountability to a municipality with such limited staff is too much at this point in time.</i>			X
Support the retrofit of at-risk homes in subdivisions <i>Comment: This objective has not been pursued. It’s applicability in the urban area may be limited but it should be carried over (see WS-2).</i>		X	
Retrofit hazardous material containment areas. <i>Comment: This objective has not been pursued. This objective should be carried over (see WS-3).</i>		X	

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Encourage non-structural retrofitting of hazardous materials containment		X	
<i>Comment: This objective has not been pursued. This objective should be carried over (see WS-4).</i>			
Ensure that the public is informed of the necessity of maintaining a 3 day supply of food and water			X
<i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			
Develop public information packets ready to deploy following a disaster event			X
<i>Comment: CRESA was identified as the Lead Agency on this objective. Washougal doesn't currently have a PIO.</i>			
Ensure that residents understand the benefits of defensible space to minimize and reduce the impacts of fires.		X	
<i>Comment: This objective has not been pursued. While the hiring of a full-time employee to facilitate this objective may be cost prohibitive it should be carried over (see WS-5).</i>			
Ensure severe weather warning system and public education for tornadoes in place.			X
<i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			
Expand the public awareness program about hazard materials			X
<i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			
Cultivate an awareness program for landslide hazards			X
<i>Comment: CRESA was identified as the Lead Agency on this objective. Landslide hazard areas are identified throughout Washougal and standards are in place to regulate development on and near them.</i>			
Develop an automated method to notify the public of events during a disaster.			X
<i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			
Expand weather radio systems to include all of Clark County			X
<i>Comment: CRESA was identified as the Lead Agency on this objective.</i>			
Provide fast, accurate spatial incident information for emergency services response.		X	
<i>Comment: This objective has not been pursued. This objective should be carried over (see WS-6).</i>			
Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy		X	
<i>Comment: This objective has not been pursued. This objective should be carried over (see WS-7). If training opportunities still exist through FEMA they can be utilized.</i>			
Determine critical government functions and establish redundancy for these functions.		X	
<i>Comment: This objective has not been pursued and should be carried over (see WS-8).</i>			
Target development and preparedness efforts of Tier II hazardous material facilities		X	
<i>Comment: This objective has not been pursued and should be carried over (see WS-9).</i>			
Encourage partnerships among agencies to promote uniformity among no-burn policies in forest lands[GK19]	X	X	
<i>Comment: The Clark County Fire Marshall collaborates and partners with Federal, State and Local Fire Agencies throughout the year, to promote uniformity among no-burn policies not just in forest lands, but the entire County, during regularly scheduled meetings and based on circumstances, whenever necessary outside regular meetings. (See WS-10)</i>			

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
Develop a contingency/Business resumption organization			X
<i>Comment: CRESA was identified as lead agency. The Downtown Washougal Association (DWA) could also possibly be a partner.</i>			
Provide opportunities for strategic relations between emergency managers and social service providers.			X
<i>Comment: CRESA and the American Red Cross were identified as lead agencies.</i>			
Require the construction of earthquake-resilient structures[GK20]	X		
<i>Comment: The City of Washougal has adopted the latest State Building Code.</i>			
Develop integrated County stormwater basin-wide plans[GK21]	X		
<i>Comment: The Clark County Stormwater Plan was completed in 2009 and is updated annually in the first quarter of the year. Last update was March 2016. Plan includes maintenance, repair, etc.</i>			
Promote development off of the floodplain		X	
<i>Comment: Development is encouraged to stay out of the floodplain but it is not required to and if it is developed it must be consistent with the adopted floodplain regulations. Density transfer is an option but it is also not required. This objective should be carried over (see WS-11).</i>			
Consider adoption of a zero-rise floodway		X	
<i>Comment: This objective has not been pursued. This objective should be carried over (see WS-12).</i>			
Expand the County Clean Water Program[GK22]	X		
<i>Comment: Clark County Environmental Services expanded the program to include an integrated Stormwater Basin plan and retrofitting and property purchase through the Legacy Lands Program.</i>			
Develop a method of assessing and documenting landslide hazard areas.[GK23]	X		
<i>Comment: Landslide hazard areas have been identified by the City, which requires additional standards for development within these areas.</i>			
Support the use of LIDAR mapping technology to refine landslide hazard maps	X		
<i>Comment: I believe the LIDAR has been utilized to better map the topography throughout the County and including Washougal.</i>			
Ensure state certification of licensing for professionals performing geotechnical evaluations	X		
<i>Comment: The City of Washougal requires reports for development in geologically hazardous areas to be completed by a "professional geologist or a professional engineer experienced and knowledgeable in the practice of engineering geology". This requirement was adopted January 17, 2006 under Ordinance 1543.</i>			
Institute Low Impact Development Practices		X	
<i>Comment: This objective is currently underway and should be carried over (see WS-13).</i>			
Initiate a vegetation management program		X	
<i>Comment: This objective is underway and should be carried over (see WS-14).</i>			
Ensure emergency vehicle access to all residents to allow effective response and recovery from disaster events.		X	
<i>Comment: This objective is ongoing and should be carried over (see WS-15).</i>			
Develop priority routes throughout the county and improve these routes to a higher standard.[GK24]		X	
<i>Comment: The City currently has priority snow routes during winter events, but not all routes have been improved to a higher standard (see WS-16).</i>			
Ensure that electricity is available to populations requiring priority for electricity.			X

Action Item	Completed	Carry Over to Plan Update	Removed; No Longer Feasible
<i>Comment: CPU is identified as the lead agency for this objective.</i>			
Ensure appropriate equipment is available during events.		X	
<i>Comment: This is an ongoing objective and should be carried over (see WS-17).</i>			
Condition development in isolated interface zones on adequate fire suppression capability and redundant access.		X	
<i>Comment: This is an ongoing objective but should be more focused on the urban area. It should be carried over (see WS-18).</i>			

1.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-9 lists the actions that make up the City of Washougal 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 1-9. Hazard Mitigation Action Plan Matrix [GK25]

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	Short-term
WS-2 —Through education and outreach support the retrofit of at-risk homes in subdivisions to prevent fire. [GK26]						
Existing	Wildland Fires	1,2,4,7,9,12	Community Development / C-W Fire	High	HMGP, PDM, Owner’s Expense	Short-term
WS-3 —Encourage the retrofit hazardous material containment areas. [GK27]						
Existing	Earthquakes	1,2,4,5,12	Community Development / C-W Fire	High	HMGP, Owner’s Expense	Short-term
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	Short-term
WS-5 —Educate residents as to the benefits of defensible space to minimize and reduce the impacts of fires. [GK28]						
New and Existing	Wildland Fires	1,2,4,7,9,12	C-W Fire	Medium	HMGP, PDM, General Fund	Short-term
WS-6 —Provide fast, accurate spatial incident information for emergency services response.						
New	All Hazards	1,2,3,4,5,12	Washougal PD, C-W Fire	Medium	General Fund	Short-term
WS-7 —Conduct pre-earthquake assessments for critical and essential facilities and develop a risk-reduction strategy						
New and Existing	Earthquakes	3,5,10,12	Community Development, Public Works, Washougal PD, C-W Fire	Medium	HMGP, PDM, General Fund	Short-term
WS-8 —Determine critical government communication functions and establish redundancy for these functions						
New	All Hazards	1,3,5,8,10,12	Community Development, Public Works, Washougal PD, C-W Fire	High	General Fund	Short-term
WS-9 —Identify Tier II hazardous material facilities within Washougal and assess spill contingency plans and ensure adequate emergency services and response capabilities. [GK29]						
New and Existing	Earthquakes	1,2,4,12	Community Development / C-W Fire	Medium	HMGP, PDM, General Fund	Short-term
WS-10 —Continue to encourage partnerships among agencies to promote uniformity among no-burn policies.						
New	Wildland Fires	2,4,5,6,12	C-W Fire	Low	HMGP, PDM, General Fund	Short-term
WS-11 Promote development off of the floodplain						
New and Existing	Flood	2,4,7,12	Community Development	Medium	General Fund	Short-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
WS-12 —Consider adoption of a zero-rise floodway						
New and Existing	Flood	2,4,12	Community Development	Medium	General Fund	Short-term
WS-13 —Institute low impact development practices						
New and Existing	Flood	1,2,4,5,7,11,12	Community Development / Public Works	Low	State Grants, General Fund	Short-term
WS-14 —Initiate a vegetation management program						
New and Existing	Landslide	1,2,4,5,7,12	Community Development / Public Works	Low	General Fund	Short-term
WS-15 —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-16 —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	Short-term
WS-17 —Ensure appropriate communication equipment is available during events. [GK30]						
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-18 —Condition development in areas without adequate fire suppression to provide greater access.						
New	Wildland Fire	1,2,4,5,6,7,12	C-W Fire	Low	General Fund	Short-term
WS-19 —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-20 —Where appropriate, support retro-fitting, purchasing or relocating structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.						
New	All Hazards	1, 2, 4, 5, 7, 9, 12	Community Development / Public Works	High	HMGP, PDM, FMA	Short-term
WS-21 —Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.						
New	All Hazards	1, 5, 6, 7, 11, 12	Community Development	Low	General Fund	Ongoing

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
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: <ul style="list-style-type: none"> • Enforcement of the frequently flooded areas ordinance • Participate in floodplain identification and mapping updates • Provide public assistance/information on floodplain requirements and impacts. 						
New and Existing	Flood	1, 2, 4, 5, 6, 9, 11, 12	Community Development	Low	General Fund	Ongoing

Table 1-10. 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	6	Low	Medium	No	No	No	Low	Low
WS-7	4	Medium	Medium	Yes	Yes	No	Medium	Medium
WS-8	6	High	High	Yes	No	No	Medium	Medium
WS-9	4	Low	Medium	No	Yes	No	Low	Medium
WS-10	5	Low	Low	Yes	Yes	Yes	High	Medium
WS-11	4	High	Medium	Yes	No	No	Medium	Low
WS-12	3	Medium	Medium	Yes	No	No	Medium	Low
WS-13	7	Low	Low	Yes	Yes	Yes	High	Medium
WS-14	6	Low	Low	Yes	No	Yes	High	Low
WS-15	6	High	High	Yes	No	No	Low	Low
WS-16	7	Medium	High	No	Yes	No	Low	Medium
WS-17	6	Medium	High	No	No	No	Low	Low
WS-18	8	Medium	Low	Yes	No	Yes	High	Low
WS-19	5	High	Medium	Yes	Maybe	No	Medium	Medium
WS-20	7	High	High	Yes	Yes	No	Medium	Medium
WS-21	6	Low	Low	Yes	No	Yes	Medium	Low
WS-22	8	High	Low	Yes	No	Yes	Medium	Low

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

Table 1-11. 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-8, WS-15, WS-19, WS-20	WS-6, WS-15, WS-19, WS-20	WS-8, WS-19, WS-21		WS-6, WS-8, WS-15, WS-19	WS-15
Earthquake	WS-1, WS-3, WS-4; WS-7, WS-8, WS-9, WS-15, WS-16, WS-19, WS-20	WS-1, WS-3, WS-4, WS-6, WS-7, WS-9, WS-15, WS-16, WS-17, WS-19, WS-20	WS-1, WS-3, WS-4, WS-8, WS-19, WS-21		WS-6, WS-7, WS-8, WS-15, WS-16, WS-17, WS-19	WS-1, WS-3, WS-15
Landslide	WS-8, WS-13, WS-14, WS-15, WS-13, WS-14, WS-15, WS-16, WS-19, WS-20	WS-6, WS-13, WS-14, WS-15, WS-13, WS-15, WS-16, WS-17, WS-19, WS-20	WS-8, WS-13, WS-14, WS-19, WS-21	WS-13, WS-14, WS-15, WS-13, WS-14	WS-6, WS-8, WS-15, WS-16, WS-17, WS-19	WS-15
Flood	WS-8, WS-12, WS-11, WS-12, WS-13, WS-15, WS-16, WS-19, WS-20, WS-22	WS-6, WS-12, WS-13, WS-12, WS-13, WS-15, WS-16, WS-17, WS-19, WS-20, WS-22	WS-8, WS-19, WS-21, WS-22	WS-12, WS-13, WS-12, WS-13, WS-19	WS-6, WS-8, WS-15, WS-16, WS-17, WS-19	WS-15
Severe Weather	WS-8, WS-15, WS-16, WS-19, WS-20	WS-6, WS-15, WS-16, WS-17, WS-19, WS-20	WS-8, WS-19, WS-21		WS-6, WS-8, WS-15, WS-16, WS-17, WS-19	WS-15
Volcano	WS-8, WS-15, WS-16, WS-19, WS-20	WS-6, WS-15, WS-16, WS-17, WS-19, WS-20	WS-8, WS-19, WS-21		WS-6, WS-8, WS-15, WS-16, WS-17, WS-19	WS-15
Wildland Fire	WS-2, WS-5, WS-10, WS-14, WS-15, WS-16, WS-28, WS-19, WS-20	WS-2, WS-5, WS-10, WS-15, WS-16, WS-17, WS-18, WS-19, WS-20	WS-2, WS-5, WS-8, WS-19, WS-21	WS-5, WS-14	WS-6, WS-8, WS-15, WS-16, WS-17, WS-18, WS-19	WS-2, WS-15

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