

Appendix C:

City of Oregon City

Addendum to the Clackamas County Natural Hazards Mitigation Plan 2012 Amendments and Update

The Oregon Partnership for Disaster Resilience prepared this Appendix to the City of Oregon City Addendum to the Clackamas County Natural Hazard Mitigation Plan (Oregon City Addendum) as part of the 2011-12 update to the Clackamas County Natural Hazard Mitigation Plan. Upon local adoption, the appendix will become part of the Oregon City Addendum and will ensure that the City of Oregon City maintains FEMA Pre-Disaster Mitigation Program eligibility as well as compliance with the Clackamas County NHMP.

This appendix is organized according to the sections outlined in the Oregon City Addendum. A description of each section is presented below with proposed changes and updates following each.

Section 1: Planning Process

The planning process section of the Oregon City Addendum describes the activities used by the steering committee and community to develop the plan. Updates to the Planning Process section are as follows:

On Page 4, following Paragraph 7 of the “Who Participated in Developing the Addendum?” subsection, insert the following language:

2012 Effort

- *Laura Comstock, Clackamas County Emergency Management/RARE*
- *Bob Cullison, Oregon City Public Works*
- *Kathy Griffin, Oregon City Public Works*
- *Gail Hoskins, OCSD #62*
- *David Knoll, GIS Coordinator*
- *Nancy Kraushaar, Oregon City Public Works*
- *Scott Linfesty, Oregon City Building Official*
- *Gregg Ramirez, Clackamas Fire District #1*
- *Pete Walter, Oregon City Planning*

2012 Planning Process

The RARE Participant and Clackamas County Emergency Management developed and facilitated one plan update meeting with the Hazard Mitigation Plan Committee on June 6, 2012. Please see Appendix A for the meeting agenda and minutes.

June 6th, 2012: The participant worked with the city lead to convene the steering committee and meet to review and update the city's Natural Hazards Mitigation Plan Addendum. Because the county is in the process of updating their NHMP, each of the cities were required to update their addendums, regardless of when their plan was last updated or developed. This is to ensure that the county and all of the cities are on the same timeline, and will now all update their NHMP's in 5 years. As part of this meeting, the steering committee reviewed the county's updated hazard assessment and made necessary changes to their hazard assessment, if necessary. The committee also reviewed their list of community assets to determine if any new additions or changes needed to be made. The committee also reported on progress made to the action items listed in the current NHMP. The committee reviewed the mitigation strategy and plan implementation and maintenance pieces and made changes if necessary.

On Page 6, first paragraph following the "Formal Review Process" subsection, delete the entire paragraph and replace with the following paragraphs:

~~*The HMPC will meet semi annually to identify funding for the implementation of mitigation actions, evaluate the effectiveness of the plan, develop new mitigation actions to reduce losses from natural hazards, and to reflect changes in land development or programs that may affect mitigation priorities. The first meeting will be held in the spring, and the second meeting will be held in the fall. At the spring meeting the group can reflect on the previous winter season and prepare for hazards related to summer, such as wildfires. During the fall meeting the group can prepare for winter related hazards, such as winter storms and floods. A new list of members will be generated at the beginning of each year to ensure the committee remains relevant.*~~

The HMPC will meet annually to identify funding for the implementation of mitigation actions, evaluate the effectiveness of the plan, develop new mitigation actions to reduce losses from natural hazards, and to reflect changes in land development or programs that may affect mitigation priorities. At the meeting the group can reflect on the previous hazard season and prepare for upcoming hazards. A new list of members will be generated at the beginning of each year to ensure the committee remains relevant.

The convener, or city lead designee, will also be responsible for meeting annually with the county Hazard Mitigation Coordinator. This meeting will provide a chance for each of the city leads to meet together and discuss updates and progress with the Hazard Mitigation Coordinator. The convener will report back to the HMPC with information gathered. The Coordinator will be responsible for setting up the meeting, and providing the city leads with updates on new studies or potential funding opportunities for mitigation projects.

The convener will be responsible for documenting the outcome of the annual meeting, as well as the meeting with the county's Hazard Mitigation Coordinator.

On Page 9, first paragraph of the "What are the Mitigation Actions Identified by the City of Oregon City?" subsection, delete the sentences 3 and 4:

~~Short term action items (ST) are activities that agencies may implement with existing resources and authorities within one to two years. Long term action items (LT) may require new or additional resources or authorities, and may take between one and five years to implement.~~

On Page 9, first paragraph of the “What are the Mitigation Actions Identified by the City of Oregon City?” subsection, delete the last sentence and replace with the following:

~~The action items are organized within the following matrix, which lists all of the multi-hazard and hazard-specific action items included in the mitigation plan addendum.~~

The action items are organized in Appendix B: Action Items, which lists all of the multi-hazard and hazard-specific action items included in the mitigation plan addendum.

Section 2: Community Profile

The community profile section of the Oregon City Addendum describes a variety of community characteristics specific to the City of Oregon City. Based on new information compiled during the Clackamas County NHMP update process, updates to the Oregon City Addendum include the following:

On Page 19, under the “Historical and Cultural Resources” subsection, remove the following bullets:

- ~~• Baker Cabin Historic Site~~
- ~~• Philip Foster Farm~~

On Page 19, under the “Historical and Cultural Resources” subsection, add the following bullet:

- Barclay House

Section 3: Hazard Assessment

The hazard assessment section of the Oregon City Addendum provides information on identifying hazards based on their geographic location, probability, and intensity; vulnerability assessment and inventory of community assets, and; a risk analysis estimating potential losses from each hazard. Based on new information compiled during the Clackamas County NHMP update process, updates to the Oregon City Addendum include the following:

On Page 32, end of Paragraph 1 of the “Community Assets: Vulnerability Assessment” section, insert the following:

It is important to note that the facilities identified as “critical” and “essential” are characterized differently than the structural code that identifies buildings as “essential” and “non-essential.” The structural code uses different language and

criteria and therefore have completely different meanings than the buildings identified in Oregon City's NHMP.

On Page 32, under the "Community Assets: Vulnerability Assessment" section, edit the following bullets listed under "City Facilities":

- ~~Willamette Falls Hospital (C)~~
- ~~Operations Center (C)~~
- ~~Oregon City Carnegie Center~~
- Providence Willamette Falls Hospital (C)
- Public Works Operations Center (C)
- Oregon City Carnegie Center Library (E)

On Page 32, under the "Community Assets: Vulnerability Assessment" section, add the following bullets listed under "City Facilities":

- Hilltop Fire Station (C)

On Page 32, under the "Community Assets: Vulnerability Assessment" section, remove the following bullets listed under "City Facilities":

- ~~Abernethy Center (E)~~
- ~~City Office Buildings (E)~~

On Page 32, under the "Community Assets: Vulnerability Assessment" section, add the following bullets listed under "County Facilities":

- Clackamas County Roads Services

On Page 32, under the "Community Assets: Vulnerability Assessment" section, remove the following bullets listed under "County Facilities":

- ~~Beavercreek Fire Station (C)~~

On Page 32, under the "Community Assets: Vulnerability Assessment" section, remove the following bullets listed under "Federal Facilities":

Federal Facilities

- ~~National Guard Armory (E)~~

On Page 32, under the "Community Assets: Vulnerability Assessment" section, edit the following bullets listed under "Schools (Potential Shelter Sites)":

- ~~Oregon City High School—Jackson Campus~~
- Jackson Campus

On Page 33, under the "Community Assets: Vulnerability Assessment" section, edit the following bullets listed under "Infrastructure - Wastewater":

- ~~Settler's Point Lift Station (E)~~

- *Settler's Point Pump Station (E)*

On Page 33, under the "Community Assets: Vulnerability Assessment" section, remove the following bullets listed under "Infrastructure - Water":

- ~~*Boynton Lift Station (E)*~~

On Page 33, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Water":

- ~~*Boynton Standpipe Reservoir (C)*~~
- *Boynton Standpipe Reservoir and Pump Station (C)*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~*Willamette River Bridge*~~
- *Highway 43 Arch Bridge*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~*I-205 at Clackamas River*~~
- *I-205 bridge over Clackamas River*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~*McLoughlin Blvd at Willamette River*~~
- *McLoughlin Blvd Viaduct*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~*I-205 at Main Street*~~
- *Main Street overcrossing at I-205*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~*Washington Street at Abernethy Creek*~~
- *Washington Street Bridge (at Abernethy Creek)*

On Page 34, under the "Community Assets: Vulnerability Assessment" section, edit the following bullet listed under "Infrastructure - Bridges, Overpasses and Main Culverts (C)":

- ~~Holcomb Blvd at Oregon 213~~
- *Oregon 213 overcrossing at Holcomb Blvd*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~McLoughlin Tunnel at UPRR~~
- *McLoughlin Blvd Tunnel at UPRR*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~Anchor Way at Abernethy~~
- *Anchor Way Bridge at Abernethy Creek*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~George Abernethy Bridge/I-205 over Willamette~~
- *George Abernethy Bridge (I-205 at Willamette)*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~Hwy 213/Redland Road overpass~~
- *Redland Road overcrossing at Hwy 213*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~McLoughlin Blvd. at Clackamas Road~~
- *Main Street Extension overcrossing at McLoughlin Blvd.*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~McLoughlin at Abernethy Culvert~~
- *Abernethy Creek Culvert underneath McLoughlin Blvd.*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, edit the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- ~~S.E. 82nd Pedestrian Bridge~~
- *Pedestrian Bridge to Gladstone*

On Page 34, under the “Community Assets: Vulnerability Assessment” section, add the following bullet listed under “Infrastructure – Bridges, Overpasses and Main Culverts (C)”:

- *Washington Street overcrossing at Hwy 213*

Section 4: Natural Hazards

The risk assessment section of the Oregon City Addendum describes the types, causes, characteristics and relative risk posed by natural hazards on the City of Oregon City. Based on new information compiled during the Clackamas County NHMP update process, updates to the Oregon City Addendum include the following:

On Page 45 Paragraph 1 of the “Flood Mitigation Action Items” subsection, insert the following sentence at the end:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 46-47, Remove all of the action items following Paragraph 1 of the “Flood Mitigation Action Items” subsection, and move them to Appendix B: Action Items.

On Page 51, Sentence 5 of the “Hazard Scores” subsection, edit the following sentence:

~~*History of landslide hazard events was determined to be high, meaning four or more landslide events have occurred in a 100 year period.*~~

History of landslide hazard events was determined to be moderate, meaning 2 to 3 events have occurred in the past 100 years.

On Page 53 Paragraph 1 of the “Landslide Mitigation Action Items” subsection, insert the following sentence at the end:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 53-54, Remove all of the action items following Paragraph 1 of the “Landslide Mitigation Action Items” subsection, and move them to Appendix B: Action Items.

On Page 57, remove Paragraph 1 under the “Hazard Scores” subsection and replace with the following:

~~*The HMPC determined the probability of a wildfire to be moderate, meaning one or more wildfire events are likely within a 50 year period. This is in agreement with the county’s moderate rating. Vulnerability is moderate; meaning 1-10% of the population is likely to be affected by a wildfire. This score is also in agreement with the county’s moderate rating. History of wildfire events was determined to be*~~

~~moderate, meaning 2-3 wildfire events have occurred in a 100 year period. Finally, the HMPC determined maximum threat to be moderate; meaning a maximum of 5-25% of the population could be affected by a wildfire in a worst case scenario. These scores will be used and discussed in more detail in Section 5.~~

The HMPC determined the probability of a wildfire to be low, meaning one incident is likely within a 75 to 100 year period. This is lower than the county's moderate rating. Vulnerability is low; meaning less than 1 percent of the population is likely to be affected by a wildfire. This score is also lower than the county's moderate rating. History of wildfire events was determined to be low, meaning 0-1 wildfire events have occurred in a 100 year period. Finally, the HMPC determined maximum threat to be low; meaning less than 5% of the population could be affected by a wildfire in a worst case scenario. These scores will be used and discussed in more detail in Section 5.

On Page 58 Paragraph 1 of the "Wildfire Mitigation Action Items" subsection, insert the following sentence at the end:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 58-59, Remove all of the action items following Paragraph 1 of the "Wildfire Mitigation Action Items" subsection, and move them to Appendix B: Action Items.

Page 61, remove the heading, "Severe Storm: Wind and Winter" and replace with the following

- ~~Severe Storm: Wind and Winter~~
- **Severe Storm: Wind, Winter, and Extreme Heat**

Page 61, remove Paragraph one of the "Severe Storm" subsection and insert the following:

~~Wind and winter storms are caused by severe weather conditions. Wind storms can occur at any time of the year while severe winter storms are limited to the winter months.~~

Wind, winter, and extreme heat (severe storms) are caused by severe weather conditions. Wind storms can occur at any time of the year, while winter storms are limited to the winter months. These storms produce linear winds rarely exceeding 90 miles per hour. A winter storm can be accompanied by high winds. Wind, winter, and extreme heat events are addressed together because they exhibit similar impacts, particularly in the form of damage to trees, power lines and utility lines.

Page 61, End of Paragraph 2 of the "Severe Storm" subsection, insert the following:

Extreme heat is characterized as several consecutive days with temperatures exceeding 100 degrees. With dangerous temperatures, the risk is especially high to vulnerable populations including young children and the elderly.

On Page 62, remove the second to last sentence under the “Hazard Scores” subsection and replace with the following:

~~*Finally, the HMPC determined maximum threat to be high, meaning more than 25% of the population could be affected by a severe storm in a worse case scenario.*~~

Finally, the HMPC determined maximum threat to be moderate; meaning between 5% and 25% of the population could be affected by a severe storm in a worst case scenario.

On Page 62, insert the following paragraph at the end of Paragraph 1 under the “Hazard Scores” subsection:

Extreme heat has a very low threat in Oregon City. The HMPC estimates the probability for future extreme heat events is ‘low,’ meaning one incident is likely within a 75 to 100 year period. This estimate is in accordance with the county’s ‘low’ rating. The vulnerability estimate of future extreme heat events is ‘low,’ meaning less than 1% of the population and assets would be affected in a major event. This estimate is lower than the county’s ‘moderate’ rating. The HMPC also determined that both the maximum threat of heat events and the history were ‘low’ meaning less than 5% of the population will be affected during an extreme heat event, and only 0 to 1 extreme heat events have occurred in the past 100 years, respectively.

On Page 63 Paragraph 1 of the “Severe Storm Mitigation Action Items” subsection, insert the following sentence at the end:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 63, Remove all of the action items following Paragraph 1 of the “Severe Storm Mitigation Action Items” subsection, and move them to Appendix B: Action Items.

On Page 68, remove sentences 1 and 2 from Paragraph 1 under the “Hazard Scores” subsection and replace with the following:

~~*The HMPC determined the probably of an earthquake to be moderate, meaning one or more earthquakes are likely within a 50 year period. This is lower than the county’s high rating because based on history the HMPC did not believe they would have one or more large scale earthquakes within a 10 year period.*~~

The HMPC determined the probability of an earthquake to be moderate, meaning one or more earthquakes are likely within a 35 to 75 year period. This is higher than the county’s low rating.

On Page 68 Paragraph 1 of the “Earthquake Mitigation Action Items” subsection, insert the following sentence at the end:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 68-69, Remove all of the action items following Paragraph 1 of the “Earthquake Mitigation Action Items” subsection, and move them to Appendix B: Action Items.

On Page 71, edit the following sentence under the “Hazard Scores” subsection, and replace with the following:

~~*Vulnerability is low; meaning less than 1% of the population is likely to be affected. This score is lower than the county's high rating because Oregon City is located very far from any active volcanoes, whereas parts of the county border Mt. Hood.*~~

Vulnerability is low; meaning less than 1% of the population is likely to be affected. This score is lower than the county's moderate rating.

On Page 72, following the “Volcano” subsection, insert the following new “Drought” subsection:

Drought Profile

The Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan adequately describes the causes and characteristics, history, location, extent and impacts of drought affecting the City of Oregon City. Descriptions of the drought hazard can be found on pages DR-1 to DR-6 of the 2012 Clackamas County Natural Hazards Mitigation Plan update.

The probability of drought in Oregon City was determined using scientific data, historical occurrences, and local knowledge. The HMPC estimates the probability of drought to be ‘low’ meaning one incident is likely within a 75 to 100 year period. This is lower than the county's ‘moderate’ rating. The HMPC estimates that Oregon City has a ‘low’ vulnerability to drought conditions, meaning less than 1% of the population could be affected in a large-scale regional event. This is in agreement with the county's ‘low’ rating.

Drought Mitigation Activities

The existing drought hazard mitigation activities are conducted at the county, regional, state, and federal levels and are described in the Clackamas County Natural Hazards Mitigation Plan. As such, the information will not be repeated here.

Drought Mitigation Action Items

The City of Oregon City does not believe that implementing drought-related mitigation activities will be cost-effective at this time. As such, the city has not identified drought mitigation action items. Oregon City will partner with Clackamas

County, however, on the implementation of mitigation strategies that benefit both jurisdictions.

On Page 73, Paragraph 1 of the “Multi-Hazard Action Items (MH)” subsection, edit the following sentence:

~~*Multi-hazard action items are those activities that pertain to all seven hazards in the mitigation plan: flood, landslide, wildfire, severe winter storm, windstorm, earthquake, and volcanic eruption.*~~

Multi-hazard action items are those activities that pertain to all nine hazards in the mitigation plan: flood, landslide, wildfire, severe winter storm, windstorm, extreme heat, earthquake, volcanic eruption, and drought.

On Page 73 Paragraph 1 of the “Multi-Hazard Action Items (MH)” subsection, insert the following sentence:

The action item worksheets with updated progress for 2012 are located in Appendix B: Action Items of this addendum.

On Page 73-75, Remove all of the action items following Paragraph 1 of the “Multi-Hazard Mitigation Action Items” subsection, and move them to Appendix B: Action Items.

Section 5: Mitigation Planning Priority System

The Mitigation Planning Priority Section of the Oregon City Addendum describes the project review and prioritization process for the action items outlined for each hazard in Appendix B: Action Items Worksheets. Based on new information compiled during the Clackamas County NHMP update process, updates to the Oregon City Addendum include the following:

On Page 76, following Paragraph 1 of the “Action Item Prioritization Methodology” subsection, insert the following:

Note: the City of Oregon does not believe that implementing drought and volcanic-related mitigation activities will be cost-effective at this time. As such, the city has not identified drought or volcanic-eruption mitigation action items.

On Page 78, replace “Table 5.1 Natural Hazards Prioritization Score” with the following updated Table:

Table 5.1 Natural Hazards Prioritization Score

Hazard	History	Vulnerability	Max. Threat	Probability	Total	Points Assigned
Weight Factor	2	5	10	7		
Multi-Hazard	-	-	-	-	-	10
Winter Storms	18	40	50	56	164	9
Flood	20	20	50	70	160	8
Earthquake	4	25	60	35	124	7
Landslide	12	15	30	56	113	5
Wind Storms	8	30	40	35	113	5
Volcano	2	10	70	7	89	4
Wildfire	6	15	30	21	72	3
Drought	1	2	2	2	7	1
Extreme Heat	1	2	2	2	7	1