

# Appendix B: Planning and Public Process

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## Memo

**To:** Federal Emergency Management Agency  
**From:** Oregon Partnership for Disaster Resilience  
**Date:** August 25, 2010  
**Re:** List of changes to the 2006 Marion County NHMP for the 2010 Plan Update

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### Purpose

This memo describes the changes made to the 2006 Marion County Natural Hazards Mitigation Plan (NHMP) during the 2010 plan update process. Major changes are documented by plan section.

### Project Background

In January 2010, Marion County partnered with the Oregon Partnership for Disaster Resilience (OPDR) to update the 2006 Marion County Natural Hazards Mitigation Plan (NHMP). The Disaster Mitigation Act of 2000 requires communities to update their mitigation plans every five years to remain eligible for Pre-Disaster Mitigation (PDM) program funding, Flood Mitigation Assistance (FMA) program funding, and Hazard Grant Mitigation Program (HMGP) funding. OPDR met with members of the Marion County steering committee in January, March, April, and May 2010 to update all content within the county's NHMP. OPDR and the committee made several changes to the 2006 NHMP. Major changes are documented and summarized in this memo.

### 2010 Plan Update Changes

The sections below only discuss *major* changes made to the 2006 Marion County NHMP during the 2010 plan update process. Major changes include replacement or deletion of large portions of text, changes to the plan's organization, and new additions to the plan. If a section is not addressed in this memo, then it can be assumed that no significant changes occurred.

The plan's format and organization have been altered to fit within OPDR's plan templates. Table B1 below lists the 2006 plan section names and the corresponding 2010 section names, as updated. This memo will use the 2010 plan update section names to reference any changes, additions, or deletions within the plan.

## B1. Changes to Plan Sections

2006 Marion County NHMP	2010 Marion County NHMP
Table of Contents	Table of Contents
Executive Summary	Executive Summary
Section 1: Introduction	Section 1: Introduction
Section 2: Community Profile	Section 2: Community Overview
Section 3: Risk Assessment	Hazard Annex Introduction
Section 4: Mission, Goals, and Action Items	Section 3: Mission, Goals, and Action Items
Section 5: Plan Implementation	Section 4: Plan Implementation and Maintenance
Section 6: Flood Hazards	Hazard Annex: Flood
Section 7: Landslide	Hazard Annex: Landslide
Section 8: Wildfire	Hazard Annex: Wildfire
Section 9: Severe Winter Storm	Hazard Annex: Severe Winter Storm
Section 10: Wind Storm	Hazard Annex: Wind Storm
Section 11: Drought	Hazard Annex: Drought
Section 12: Earthquake	Hazard Annex: Earthquake
Section 13: Volcanic Hazard	Hazard Annex: Volcanic Eruption
Appendix A: Resource Directory	Appendix E: Resource Directory
Appendix B: Public Participation and Process	Appendix B: Planning and Public Process
Appendix C: Approaches for Economic Analysis	Appendix C: Economic Analysis of Natural Hazards Mitigation Projects
Appendix D: List of Acronyms	Removed

Several new sections were added to the 2010 Marion County NHMP. The committee added the dam failure hazard to address the potential flooding issues caused by dam failure. The 2010 NHMP also includes a Volume III-City/Special District Addenda for the cities of Aurora, Keizer, Silverton, and Woodburn. The NHMP includes the following additional appendices:

- Appendix A: Action Items
- Appendix D: Regional Household Preparedness Survey

### Front Pages

1. The plan's cover has been updated.
2. Acknowledgements have been updated to include the 2010 project partners and planning participants.
3. The 2010 NHMP now includes an executive summary that provides information about the purpose of natural hazards mitigation planning and describes how the plan will be implemented.

### Volume I

Volume I provides the overall plan framework for the 2010 NHMP update. Volume I contains the following sections: 1) Introduction; 2) Community Overview; 3) Mission, Goals, and Action Items; and 4) Plan Implementation and Maintenance.

### Section 1: Introduction

Section 1 introduces the concept of natural hazards mitigation planning and answers the question, “Why develop a mitigation plan?” Additionally, Section 1 summarizes the 2010 plan update process, and provides an overview of how the plan is organized. Major changes to Section 1 include the following:

1. Most of Section 1 includes new information that replaces out of date text found in the 2006 NHMP. The new text defines mitigation, gives examples of mitigation strategies, and describes the federal mitigation funding programs for which Marion County is eligible to apply (i.e., the Pre-Disaster Mitigation (PDM) Program, the Flood Mitigation Assistance (FMA) Program, and the Hazard Mitigation Grant Program (HMGP)).
2. Section 1 of the 2006 NHMP discussed the methodology for developing a plan and how the plan was organized. OPDR replaced this information with text that summarized the development of the 2006 NHMP and added new text to describe the 2010 plan update process, including plan update meetings, public outreach efforts, and final plan review and adoption processes.

### Section 2: Community Overview

Section 2 describes the community in a variety of ways. This section highlights demographic, employment, housing, transportation, and land use characteristics. Major changes to Section 2 include the following:

1. Demographic, employment, housing, transportation, and land use information was updated.
2. The “History of Natural Hazards in Marion County” section has been removed and information placed within individual hazard annexes.
3. Information on “Minerals and Soils” has been removed.
4. Section 2 now includes information about Marion County’s government structure, existing plans and policies, and organizations that could assist with implementing natural hazard mitigation strategies. Additionally, all maps within Section 2 have been updated.

### Section 3: Mission, Goals, and Action items

This section provides the basis and justification for the mission, goals, and mitigation actions identified in the NHMP. Major changes to Section 3 include the following:

1. Marion County’s steering committee reviewed the 2006 plan’s mission statement and agreed to replace it with the mission statement currently identified in Section 3. The 2006 NHMP mission statement previously read as follows:

*to promote sound public policy designed to protect people, critical and essential facilities, infrastructure, utilities, private property, and the environment from natural hazards. The plan fosters partnerships, coordinated implementation and funding, public awareness, and the development of multi-objective strategies for mitigation.*

2. Marion County’s steering committee reviewed the 2006 plan’s goals and modified them with the goals currently identified in Section 3. The 2006 NHMP goals previously read as follows:

*Goal #1: PUBLIC AWARENESS*

*Goal Statement: Increase public awareness of natural hazard risks, emergency notification and response, and resources for citizen preparedness.*

*Goal #2: EDUCATION*

*Goal Statement: Educate the public on how to successfully prepare for a natural disaster with minimal property damage and no loss of life.*

*Goal #3: PREVENTATIVE*

*Goal Statement: Minimize risks to life, property, the environment, and the economy from natural hazards.*

*Goal #4: FUNDING AND IMPLEMENTATION*

*Goal Statement: Identify potential funding sources and implement potential mitigation projects.*

*Goal #5: PARTNERSHIPS AND COORDINATION*

*Goal Statements: - Create, maintain and enhance partnerships with other stakeholders involved with natural hazard management.*

*- Coordinate natural hazard mitigation efforts with adjacent jurisdictions and public/private agencies' risk management activities.*

*Goal #6: NATURAL RESOURCES UTILIZATION*

*Goal Statement: Promote the use of natural systems and features, watershed planning, and land use planning for natural hazard mitigation whenever possible to reduce long-term costs to the county and maximize effectiveness.*

*Goal #7: EMERGENCY SERVICES*

*Goal Statement: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.*

3. OPDR added new text to describe the structure of OPDR's action item forms.
4. OPDR removed text that address Multi-Hazard Action Items and moved this information into the action item forms in Appendix A.

On April 15, 2010, the Marion County steering committee met to review the 2006 NHMP action items. The Marion County steering committee reviewed and identified which of the 2006 NHMP's 96 action items had been completed or not or whether they should be deleted or deferred. Action items were deleted for a number of reasons, including not meeting basic action item criteria such as being measurable, assignable, or achievable. Action items that were deferred had not yet been addressed over the previous five years, but the steering committee decided they were still worthy of being continued for the 2010 update.

After deciding which actions to defer, the Community Planning Workshop and OPDR worked with the steering committee to formulate new action items for the 2010 Natural Hazard Mitigation Plan. These new action items are based upon continuous community needs, deferred action items, and current needs based upon the community risk assessment. They are designed to be feasibly accomplished within the next five years, and can be found in Appendix A.

The 96 action items from the 2006 NHMP and their status are discussed in table B 2 below.

Table B2. 2006 Marion County NHMP Action Items

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred Actions Only)	Explanation
<b>Drought Mitigation Action Items</b>				
D 1	Support the technical services provided by county-based agencies on effective methods of water use curtailment.	Completed		Marion County regularly supports technical services provided by county agencies.
D 2	Support local agencies' training on water conservation measures for farmers and ranchers, including drought management practices for crops and livestock.	Deferred	Drought # 1	This action has not been completed, but is being deferred for the 2010 update as Drought # 1.
D 3	Support the technical service and low-interest loans provided to farmers and ranchers so that they can develop livestock watering systems.	Deferred	Drought # 1	This action has not been completed, but is being deferred for the 2010 update as Drought # 1.
D 4	Encourage storage of water, especially off-stream storage.	Deleted		Due to the vague nature of this action item, the steering committee decided to delete this action from the 2010 update.
D 5	Support agencies' determination of locations for additional aquifer studies that might lead to greater water supplies and help determine funding sources for the studies.	Deleted		Due to the vague nature of this action item, the steering committee decided to delete this action from the 2010 update.
<b>Earthquake Mitigation Action Items</b>				

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
EQ 1	Integrate new earthquake hazard mapping data for Marion County as it becomes available and improve technical analysis of earthquake hazards.	Completed		Marion County has incorporated earthquake maps from DOGAMI into county GIS maps.
EQ 2	Encourage reduction of nonstructural and structural earthquake hazards in homes, schools, medical and care facilities, businesses, and government offices.	Deferred	Earthquake # 1	This action has not been completed, but is being deferred for the 2010 update as Earthquake # 1.
EQ 3	Encourage purchase of earthquake hazard insurance by forming partnerships with the insurance and real estate industries.	Deleted		Due to a lack of staff time and resources, this action item was not completed. It is being deleted for the 2010 update.
EQ 4	Maintain an inventory of all permitted dams in Marion County.	Completed		Marion County has mapped all the dams in the county using GIS.
EQ 5	Update the county's inventory of bridges.	Completed		Marion County has mapped all the bridges in the county using GIS.
EQ 6	Promote and continue building code standards.	Completed		Marion County regularly implements building code standards.
EQ 7	Encourage seismic strength evaluations of critical facilities in Marion County to identify vulnerabilities for mitigation of schools and universities, public infrastructure, and critical facilities to meet current seismic standards.	Deferred	Earthquake # 2	Marion County was part of DOGAMI's statewide assessment of public buildings statewide to determine the likelihood of collapse in an earthquake. However, because seismic evaluations have not been completed, this action has been deferred as Earthquake # 2.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
EQ 8	Encourage utility providers to improve the utilities' survivability in an earthquake.	Deleted, not specific		Due to the vague nature of this action item, the steering committee decided to delete this action for the 2010 update.
EQ 9	Encourage earthquake safety promotion and drills by community groups.	Completed		Marion County regularly conducts drills as part of the county emergency management program and education and outreach efforts.
EQ 10	Improve local capabilities to perform earthquake building safety evaluations.	Completed		Marion County has building inspectors training in evaluating buildings after an earthquake.
<b>Flood Mitigation Action Items</b>				
FL 1	Develop better flood warning systems.	Completed		Marion County has developed maps for flood gauges throughout the county and regularly monitors flood levels during high water events to improve flood warning capability. Marion County also updated the flood hazard response plan as part of the county Emergency Operations Plan.
FL 2	Conduct workshops for target audiences on National Flood Insurance Programs, mitigation activities, and potential assistance from FEMA's Flood Mitigation Assistance and Hazard Mitigation Grant Programs.	Deferred	Flood # 5	Marion County participated in a flood workshop hosted by DLCD and FEMA for city staff. They also conducted floodplain development training for building inspectors and the citizens corps council class. The steering committee indicated that outreach is also a regular part of their floodplain program. This action item has been deferred to continue implementation of existing ordinances, and is deferred as Flood # 5.



2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
FL 3	Maintain a map, information concerning, and a current copy of an inventory of all permitted dams built in the county.	Completed		Marion County has developed maps of dams, levees, stream gauges, and bridges in the county.
FL 4	Update the Flood Insurance Rate Maps (FIRM) for Marion County as funding becomes available	Completed		Marion County coordinated with DLCD to develop current digital flood maps for Marion County.
FL 5	Enhance data and mapping for floodplain information within Marion County, and identify and map flood-prone areas outside of designated floodplains.	Completed		Marion County has developed digital flood maps for Marion County and also has GIS flood data layers that improves use of flood data for staff and the public.
FL 6	Identify surface water drainage obstructions for all parts of unincorporated Marion County.	Deferred	Flood # 1	This action item is being deferred and changed to address bridge obstructions only. Marion County currently identifies drainage obstructions through its stormwater management plan.
FL 7	Preserve water quality by using stormwater best management practices (BMP).	Completed		Marion County has a stormwater management plan that requires stormwater permits and follows BMPs.
FL 8	Collaborate with communities along the North Santiam River downstream from the Little North Santiam River to address flooding and erosion issues.	Deferred	Flood # 2	Due to limited time and staff resources, this action has not been completed. It is being deferred for the 2010 update as Flood # 2 and reworded.
FL 9	Collaborate with river communities along the Willamette River (City of Keizer, City of Salem) and the North Santiam River (Cities of Turner) to address flooding and erosion issues.	Deferred	Flood # 2	Due to limited time and staff resources, this action has not been completed. It is being deferred for the 2010 update as Flood # 2 and reworded.
FL 10	Mitigate repetitive flood loss areas.	Deferred	Flood # 3	This action has not been completed and is being deferred as Flood Action # 3 for the 2010 update.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
<b>Landslide Mitigation Action Items</b>				
LS 1	Improve knowledge of landslide hazard areas and understanding of vulnerability and risk to life and property in hazard-prone areas.	deleted		Due to the vague nature of this action item, the steering committee decided to delete this action item.
LS 2	Encourage construction, site location and design that can be applied to steep slopes to reduce the potential adverse impacts from development.	Completed		This action is currently being implemented through existing geohazard overlay zones and has been completed.
LS 3	Identify safe evacuation and detour routes in high-risk debris flow and landslide areas.	Completed		This action has been completed. Safe evacuation and detour routes are identified in the Emergency Operations Plan.
LS 4	Compile Relative Landslide Risk maps for Marion County. Note: DOGAMI will make the final determination of "further review areas" for rapidly moving landslides as required by Oregon Senate Bill 12 (1997).	Completed		Marion County has developed GIS updates of available state digital geologic mapping data.
LS 5	Increase public education related to landslide hazards by distributing DOGAMI landslide informational brochure.	Deferred	Multi-Hazard # 3	This action has been partially completed. DOGAMI conducted a State Landslide Forum on the county's geohazard area development provisions which served to inform the public on county landslide mitigation approaches and processes. Since public education is an ongoing effort, this action is being deferred as Multi-Hazard # 3.
LS 6	Evaluate current landslide warning systems to ensure effectiveness and efficiency and increase coordination between local jurisdictions and ODF for landslide warning systems.	Deferred	Landslide # 1	This action has not been completed and is being deferred as Landslide # 1.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
LS 7	Mitigate activities in identified potential and historical landslide areas through public outreach.	Deleted		Due to the vague nature of this action item, the steering committee decided to delete this action item.
LS 8	Increase coordination between local jurisdictions, emergency responders, homeowners and ODF for landslide warning systems.	Deleted		This action has been deleted because it is currently being addressed in Landslide # 1.
LS 9	Protect existing development in landslide-prone areas.	Deferred	Landslide # 1	This action has been partially completed and is being deferred as Landslide # 1.
LS 10	Maintain public and encourage maintenance of private drainage systems.	Completed		This action is currently being implemented by Marion County Public Works and has been completed.
<b>Volcanic Eruption Mitigation Action Items</b>				
VE 1	Collaborate with USGS-CVO and related agencies to develop ash fall models that are specific to Marion County.	Deferred	Volcano # 2	This action has not been completed due to lack of time and resources and is being deferred as Volcano # 2.
VE 2	Increase awareness of volcanic eruptions and their potential impact to the county.	Deferred	Multi-Hazard # 3	This action has been completed, but due to the ongoing nature of public education has been deferred as Multi-Hazard # 3.
VE 3	Identify critical facilities and industries that may be affected by ash fall and collaborate with them on ash fall emergency response.	Completed		This action has been completed through the Volcano Incident Action Plan found in the county Emergency Operations Plan.
VE 4	Collaborate with USGS-CVO and related agencies to create ash fall warning messages that are more appropriate for Marion County.	Deferred	Volcano # 2	This action has not been completed due to lack of time and resources and is being deferred as Volcano # 2.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
VE 5	Create depositories for dust masks in strategic places in Marion County where ash fall would most likely hit.	Deferred	Volcano # 1	This action has not been completed due to a lack of staff time and resources and is being deferred as volcano # 1.
VE 6	Strengthen response and recovery programs, and develop and implement public education programs for volcanic eruption hazards.	Deleted		Marion County has conducted evacuation trainings and drills for areas that could be impacted by eruption fallout. Due to the vague nature of this action item statement, it is being deleted for the 2010 update.
VE 7	Create and map hypothetical eruption scenarios to display potential eruption hazards.	Deferred	Volcano # 2	This action has not been completed due to lack of time and resources. Due to the similarities it has with VE1 and VE4 above, it is being deferred as Volcano # 2.
VE8	Collaborate with county environmental health for immediate warning to communities about air quality following volcanic eruptions.	Deferred	Volcano # 1	This action has not ben completed due to a lack of staff time and resources, and is being deferred as Volcano # 1.
<b>Wildfire Mitigation Action Items*</b>				
WF 1	Work with the Marion Fire Defense Board in the review of plans and inspection of structures for fire code compliance.	Deferred	See Marion County CWPP	
WF 2	Advocate water storage facilities with fire-resistant electrical pump systems in developments that are not connected to a community water/hydrant system.	Deferred	See Marion County CWPP	
WF 3	Continue to promote public awareness campaigns for individual property owners living in interface areas.	Deferred	See Marion County CWPP	

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WF 4	Seek funding and labor opportunities to staff fuel-reduction projects throughout wildfire hazard prone areas in Marion County	Deferred	See Marion County CWPP	
WF 5	Create incentives and assist landowners in reducing fuel loads on private property.	Deferred	See Marion County CWPP	
WF 6	Increase communication, coordination, and collaboration between wildland/urban interface property owners, city and county planners, and fire prevention crews and officials to address inherent risks in wildland/urban interface areas, existing mitigation (prevention/protection) measures, and federal mitigation assistance programs.	Deferred	See Marion County CWPP	
WF 7	Seek improved information gathering and distribution and technology for enhancing fire identification, initial response and evacuation if necessary.	Deferred	See Marion County CWPP	
WF 8	Enhance emergency services to increase the efficiency of wildfire response and recovery activities.	Deferred	See Marion County CWPP	Fire Districts adopted the Marion County Fire Code Application Guide to provide a uniform fire code that applies to the entire county.
WF 9	Educate agency personnel on federal cost-share and grant programs, fire protection agreements, and other related federal programs so the full array of assistance available to local agencies is understood.	Deferred	See Marion County CWPP	
WF 10	Identify funding for and develop an inventory of alternative firefighting water sources and encourage the development of additional sources.	Completed	See Marion County CWPP	Marion County received Title II funds for wildfire hazard mitigation through the County Sheriff's Department forest work crew project.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WF 11	Draft a wildfire plan that applies to both public and private lands. Plan must be seen as a policy guide that cuts across all local government operations.	Completed	See Marion County CWPP	In 2008 Marion County completed a Community Wildfire Protection Plan (CWPP).
WF 12	Create wildfire mitigation team(s) to oversee hazard reduction on nonpublic lands.	Completed	See Marion County CWPP	In 2008 Marion County completed a Community Wildfire Protection Plan (CWPP). The community wildfire protection team identified in the plan is responsible for the plan's implementation.
WF 13	Look for solutions to protect structures located outside of fire districts through partnerships, grant funding or expansion of fire district services.	Deleted	See Marion County CWPP	
WF 14	Reduce wildfire fuels.	Deferred	See Marion County CWPP	
WF 15	Promote and continue support of agricultural uses that reduce fuel loads in interface areas.	Deferred	See Marion County CWPP	
WF 16	Maintain and further develop interagency and private industry relationships for continuing strong fire response in Marion County.	Deferred	See Marion County CWPP	
WF 17	Develop and implement or enhance existing outreach and education programs aimed at mitigating wildfire hazards and reducing or preventing the exposure of residents, public agencies, private property owners, and businesses to natural hazards.	Deferred	See Marion County CWPP	Oregon Department of Forestry continues to provide wildfire prevention outreach to the public using Title II funds.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WF 18	Encourage development and dissemination of maps relating to fire hazard to help educate and assist builders and homeowners engaged in wildfire mitigation activities, and to help guide emergency services during response.	Deferred	See Marion County CWPP	
WF 19	Encourage implementation of wildfire mitigation activities in a manner consistent with the goals of promoting sustainable ecological management and community safety and economic stability.	Deferred	See Marion County CWPP	
<b>Windstorm Mitigation Action Items</b>				
WW 1	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during windstorm events.	Completed		Marion County conducts tree trimming programs throughout the county to prevent damage from falling trees.
WW 2	Enhance strategies for debris management and/or removal after windstorm events.	Completed		Marion County has developed a debris management program where vegetation is managed during the spring and summer and debris is removed by Public Works during wind storms.
WW 3	Maintain tree trimming for above-ground power lines.	Deferred	Wind Storm # 1	This action item has been completed, but due to the ongoing nature of tree trimming, it has been deferred as Wind Storm # 1.
WW 4	Map and publicize locations around Marion County that have the highest incidence of extreme windstorms.	Deferred	Multi-Hazard # 1	This action item has not been completed, but is being deferred as Multi-Hazard # 1.
WW 5	Support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms.	Completed		This action is currently being implemented through existing zoning ordinances which encourages undergrounding where possible

<b>2006 Action Item</b>	<b>Proposed Action Title</b>	<b>Status</b>	<b>2010 Action Item (Deferred)</b>	<b>Explanation</b>
WW 6	Increase public awareness of windstorm mitigation activities.	Deferred	Multi-Hazard # 3	This action has been completed, but due to the ongoing nature of public education has been deferred as Multi-Hazard # 3.
WW 7	Support/encourage contractors, homeowners and electrical utilities to use windstorm resistant construction methods where possible to reduce damage and power outages from windstorms.	Completed		This action is currently being implemented through enforcement of Marion County's building codes.
WW 8	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during windstorm events.	Completed		Marion County public works regularly maintains trees during the Spring and Summer months to prevent future tree hazards.
WW 9	Identify trees that are potentially susceptible to wind throw.	Completed		Marion County manages vegetation in the Spring and Summer months to prevent wind storms from causing power outages
WW 10	Encourage harvesting of trees along utility and road corridors, preventing potential windstorm damage.	Completed		Where possible, Marion County harvests local trees blown during a wind storm.
WW 11	Encourage critical facilities to secure emergency power.	Deferred	Multi-Hazard # 6	This action has been partially completed and is being deferred as Multi-Hazard # 6.
WW 12	Encourage harvesting of trees blown down during a windstorm.	Completed		Where possible, Marion County harvests local trees blown during a wind storm.



2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WW 13	Increase and maintain public awareness of severe windstorms and the benefits of mitigation activities through education aimed at households and businesses and increase targeting of special needs populations.	Deferred	Multi-Hazard # 7	This action has been partially completed after Marion County included a Special Needs Population provision in the county Emergency Operations Plan. Due to the actions continued importance, it is being deferred as Multi-Hazard # 7.
<b>Severe Winter Storm Mitigation Action Items</b>				
WS 1	Enhance strategies for management of debris from severe winter storms.	Completed		Marion County has developed a debris management program where vegetation is managed during the Spring and Summer and debris is removed by Public Works during winter storms.
WS 2	Develop and implement programs to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe winter storms.	Deleted		Due to the vague nature of this action item, the steering committee decided to delete this action item.
WS 3	Develop partnerships between utility providers and Marion County Public Works Divisions to document known hazard areas.	Completed		Marion County coordinates tree removal efforts with local utility providers.
WS 4	Seek funding to preposition emergency power transferconnectors in areas documented as losing power as a result of severe winterstorms, particularly in the Detroit/Idanha area	Completed		Detroit City Hall has received a generator which was supported and funded in part by Marion County.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WS 5	Increase and maintain public awareness of severe winter storms and the benefits of mitigation activities through education aimed at households, schools and businesses and increase targeting of special needs populations.	Deferred	Multi-Hazard # 3	This action has been completed, but due to the ongoing nature of public education has been deferred as Multi-Hazard # 3.
WS 6	Enhance weather monitoring to attain earlier severe winter storm warnings.	Completed		Marion County assisted NOAA in identifying/training weather watchers in canyon/East county areas to monitor local weather.
WS 7	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure in severe weather events.	Completed		Marion County public works regularly maintains trees during the Spring and Summer months to prevent future tree hazards.
WS 8	Develop and maintain comprehensive impact database and, when possible, map and publicize historical severe weather events in Marion County.	Deferred	Multi-Hazard 1	This action has not been completed but has been deferred as Multi-Hazard # 1.
WS 9	Support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from severe winter storms through public incentives and partnerships.	Completed		This action is currently being implemented through existing zoning ordinances which encourages undergrounding where possible
WS 10	Promote the benefits of tree-trimming and tree replacement programs and help to coordinate local efforts by public and private agencies.	Completed		Marion County promotes tree trimming and tree replacement programs through its public works division.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
WS 11	Reduce hazards from trees along utility and road corridors, to prevent potential winter storm damage.	Completed		Marion County public works regularly maintains trees during the Spring and Summer months to prevent future tree hazards.
WS 12	Encourage right-of-way coordination, education and management between property owners, utility operators, and government agencies.	Completed		Marion County coordinates tree trimming efforts with local utility providers and members of the public.
WS 13	Encourage harvesting of trees blown down during a winter storm.	Completed		Where possible, Marion County harvests local trees blown during a wind storm.
<b>Multi-Hazard Mitigation Action Items</b>				
MH 1	Sustain an education and outreach program for local jurisdictions and assist them in developing emergency operations, public information, and hazard mitigation plans.	Deferred	Multi-Hazard # 5	Mitigation action changed to address assisting communities in how to declare a disaster to assist them in obtaining disaster assistance. A portion of this action item has been completed when Aurora, Keizer, Silverton, and Woodburn develop NHMPs as addenda to the county.
MH 2	Review and update the Marion County Emergency Operations Plan and the Natural Hazards Mitigation Plan on an annual basis. Conduct a complete review and update of the plans and have them officially promulgated by the Marion County Board of Commissioners (BOC) every five years.	Completed		The NHMP underwent a review in 2010 and the EOP received updates to its annexes
MH 3	Evaluate the effectiveness of existing programs and identify natural hazards mitigation needs. Balance the objectives of existing programs' goals with natural hazards mitigation.	Deleted		Due to a lack of time and staff resources, this action was not completed and was deleted for the 2010 update.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
MH 4	Identify coordination opportunities to maximize or leverage funding opportunities that address multijurisdictional projects.	Completed		Marion County coordinates efforts with MCEMC, MCIC, MCCC, OHPP, SCCC, County Region 1, OEMA, ARES, Red Cross, SCFC, FDB to coordinate activities, projects, and issues.
MH 5	Develop a process for the Marion County Natural Hazards Mitigation Plan Steering Committee to assist in implementing, monitoring, and evaluating county-wide mitigation activities.	Deleted		Deleted due to the vague wording of the action item. For the 2010 update, the process for implementing the plan is established in Section 4.
MH 6	Determine the impact that each natural hazard could have on the county's priority transportation routes to and from emergency facilities and first responder sites.	Deleted		Due to a lack of time and staff resources, this action item has not been completed and has been deleted for the 2010 update.
MH 7	Identify collaborative programs that recognize ways to decrease the risks of natural hazards.	Completed		Marion County uses programs regularly to decrease the risks of natural hazards. They have successfully worked with the Marion County Citizens Corps Council and provide training in emergency response and received funding for developing business continuity plans for Marion County departments.
MH 8	Develop public and private partnerships to foster natural hazards mitigation program coordination and collaboration in Marion County.	Completed		Marion County has developed numerous partnerships to foster mitigation program coordination and collaboration. These organizations include: These organizations include: MCEMC, MCIC, MCCC, OHPP, SCCC, County Region 1, OEMA, ARES, Red Cross, SCFC, and FDB.
MH 9	Develop GIS inventories of essential facilities, at-risk buildings, and infrastructure.	Completed		Marion County GIS contains an inventory of essential facilities, at-risk buildings, and infrastructure.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
MH 10	Strengthen emergency services preparedness and response by linking emergency services with natural hazard mitigation programs and enhance public education on a regional scale.	Completed		Marion County has provided information on emergency response and hazard mitigation on its website and coordinated efforts with various local organizations to strengthen emergency preparedness and response services.
MH 11	Develop, enhance, and implement education programs aimed at mitigating natural hazards and reducing the risk to residents, public agencies, private property owners, businesses, and schools.	Deferred	Multi-Hazard # 3	Marion County has implemented education and outreach efforts by mailing "Are You Prepared" brochures, provided information on the county website, and coordinate with local organizations to enhance education efforts. Since education and outreach are continuous actions, this action item has been deferred to Multi-Hazard # 3.
MH 12	Sustain a public awareness campaign about natural hazards.	Deferred	Multi-Hazard # 3	Marion County has implemented education and outreach efforts by mailing "Are You Prepared" brochures, provided information on the county website, and coordinate with local organizations to enhance education efforts. Since education and outreach are continuous actions, this action item has been deferred to Multi-Hazard # 3.
MH 13	Make the Marion County Emergency Operations Plan, the Natural Hazards Mitigation Plan, and other resources on hazards planning and mitigation available to the public electronically.	Completed		These documents are all available on Marion County's website.
MH 14	Promote hazard-resistant utility construction and maintenance methods (Best Management Practices – BMP).	Deleted		This action is already being completed by utility companies.

2006 Action Item	Proposed Action Title	Status	2010 Action Item (Deferred)	Explanation
MH 15	Develop a system for data collection for undeclared natural hazard events.	Deferred	Multi-Hazard # 1	This action has not been completed yet, but because of its continuing importance, it is being continued as Multi-Hazard # 1.
MH 16	Improve coordination of and evaluate technical and engineering gaps in response services (e.g., communication equipment/systems) for natural hazards event response. Develop ways to improve systems and services e.g., capacity/efficiency), and develop a long-term recovery plan for Marion County from the effects of natural hazards events.	Deferred	Multi-Hazard # 2	This action has been partially completed. Marion County received a \$450,000 grant to enhance communications, hire a citizen corps council coordinator, rewrite the EOP, and conduct mandatory training. Marion County has not completed a recovery plan, and this portion of the action item has been deferred as Multi-Hazard # 2.

\* Note on wildfire mitigation actions: The 2008 Marion County Community Wildfire Protection Plan (CWPP) contains action items that were meant to replace the action items in the 2006 NHMP. As such, all actions that have not been completed have been noted as deferred and reference is made to the Marion County CWPP.

#### **Section 4: Plan Implementation and Maintenance**

This section details the formal process that will ensure that the Marion County Natural Hazards Mitigation Plan remains an active and relevant document. Major changes to Section 4 include the following:

1. The project prioritization process has been updated.
2. The convener and coordinating body members have been updated to reflect new committee membership and the plan maintenance schedule has been updated.
3. New strategies for continued public involvement have been added.
4. OPDR added a ‘Mitigation Plan Update Toolkit’ to the 2010 NHMP. The toolkit is designed to assist the plan’s convener in determining 5-year plan update activities and timelines.

#### **Volume II Hazard Annexes**

Volume II contains an introduction that describes risk assessment processes, as well as individual hazard annexes. The hazard annexes provide detailed risk assessments for dam failure, drought, earthquake, flood, landslide, volcano, wildfire, wind storms, and winter storms. For the 2010 update, OPDR reorganized the content within each hazard chapter. Content now follows OPDR’s templates, which are organized to follow the three phases of a risk assessment (i.e., community-wide hazard identification; community-wide vulnerability assessment; and risk analysis). The structure of OPDR’s hazard annexes better facilitates FEMA plan review processes as well.

In terms of content, OPDR updated each hazard’s history of events, and improved upon the hazards’ causes and characteristics descriptions, using information from new studies or reports. For each hazard annex, OPDR also included more detailed descriptions of Marion County’s vulnerability to each hazard. The hazard annexes continue to describe “existing mitigation” efforts for all hazards, and list the action items that relate to each hazard.

Finally, OPDR removed the resource directory information that was located at the end of each hazard chapter in the 2006 NHMP. Resource information is now located in Appendix E of the 2010 update.

Specific changes made to each hazard annex include the following:

##### **Hazard Annex: Introduction**

The Hazard Annex Introduction section replaces the 2006 NHMP’s Section 3: Risk Assessment. It describes the components of a risk assessment and defines the probability and vulnerability ratings discussed in each hazard annex.

##### **Hazard Annex: Dam Failure**

This is a new hazard annex that was developed for the 2010 NHMP update. While dam failure is considered a manmade hazard, the steering committee wanted to add the hazard to address potential

flood issues that could be caused by dam failure. All content within the Dam Failure Hazard Annex is new.

**Hazard Annex: Drought**

1. Added new information about the hazard's causes and characteristics and previous occurrences.
2. Added more specific information on community vulnerability information.
3. Updated vulnerability and probability assessments.
4. Update information on existing mitigation activities.
5. Removed drought resource directory.

**Hazard Annex: Earthquake**

1. Added new information about the hazard's causes and characteristics, location, and extent.
2. Updated the list of previous occurrences.
3. Added several new images that illustrate Marion County's risk (i.e., ground motion, amplification susceptibility, liquefaction susceptibility, earthquake-induced landslide susceptibility, etc.).
4. Updated the risk analysis with new data from the Oregon Department of Geology and Mineral Industries.
5. Added more specific community vulnerability information.
6. Added information from the Oregon Department of Geology and Mineral Industries' 2007 Rapid Visual Survey.
7. The 2010 update includes new vulnerability and probability assessments, as well as updated information of existing hazard mitigation activities.
8. Removed earthquake resource directory.

**Hazard Annex: Flood**

1. Added new information about the hazard's causes and characteristics, location, and extent.
2. Updated the list of previous occurrences.
3. Marion County recently received updated Flood Insurance Rate Maps (FIRMs), which are now included in the NHMP.
4. Flood loss estimates have been updated
5. Flood hazard maps were updated by the Marion County GIS Department.
6. Information about Marion County's participation in the NFIP was added / updated within the 2010 NHMP. Additional information regarding repetitive loss properties is new as well.
7. The 2010 update includes new vulnerability and probability assessments, as well as documentation of existing hazard mitigation activities. Descriptions of vulnerability have been updated/improved based on input from the steering committee and community members.
8. Removed flood resource directory.

**Hazard Annex: Landslide**

1. Added new information about the hazard's causes and characteristics, location, and extent.
2. Updated the list of previous occurrences.
3. Landslide hazard maps were updated by the Marion County GIS Department.
4. Descriptions of vulnerability have been updated / improved based on input from the steering committee and community members.



5. The 2010 update includes new vulnerability and probability assessments, as well as documentation of existing hazard mitigation activities.
6. Removed landslide resource directory.

**Hazard Annex: Volcano**

1. Much of the information within the Volcano Hazard Annex remains the same – primarily because data regarding volcanic risk has not significantly changed, and no recent volcanic events have happened in Oregon. Educational information regarding the mitigation of volcanic hazards has been removed.
2. The 2010 update includes new vulnerability and probability assessments, as well as documentation of existing hazard mitigation activities.
3. The volcano resource directory was removed.

**Hazard Annex: Wildfire**

1. In 2008, Marion County developed a Community Wildfire Protection Plan (CWPP). To be consistent with the CWPP, risk assessment information from the CWPP was incorporated into the wildfire hazard annex.
2. Wildfire hazard maps were updated by the Marion County GIS Department.
3. The wildfire resource directory was removed.

**Hazard Annex: Wind Storm**

1. Added new information about the hazard’s causes and characteristics, location, and extent.
2. Updated the list of previous occurrences.
3. Descriptions of vulnerability have been updated / improved based on input from the steering committee and community members.
4. The 2010 update includes new vulnerability and probability assessments, as well as documentation of existing hazard mitigation activities.
5. Removed wind storm resource directory.

**Hazard Annex: Winter Storm**

1. Added new information about the hazard’s causes and characteristics, location, and extent.
2. Updated the list of previous occurrences.
3. Descriptions of vulnerability have been updated/improved based on input from the steering committee and community members.
4. The 2010 update includes new vulnerability and probability assessments, as well as documentation of existing hazard mitigation activities.
5. Removed winter storm resource directory.

**Volume III City/Special District Addenda**

Added a new volume to the incorporating the City Addenda for Aurora, Keizer, Silverton and Woodburn. Volume III includes a description of the process used to develop the city addenda, incorporates the city addenda by reference and includes new “Appendix E - 2011 Amendments and Updates” sections for each of the city addenda.

**Volume IV Resource Appendices**

**Appendix A: Action Item Forms**

Appendix A is new to the Marion County NHMP and lists the plan’s action items. Action items are detailed recommendations for activities that local departments, citizens and others could engage in

to reduce risk. This appendix contains detailed action item forms for each of the mitigation strategies identified in this plan.

The 2006 NHMP included action items, but details regarding project rationale, implementation strategies, and cost were not included. The 2010 action items include some of the 2006 actions, as well as new actions that were identified by Marion County's steering committee on April 15, 2010.

**Appendix B: Planning and Public Process**

Appendix B includes documentation of all the countywide public processes utilized to develop the plan. It includes invitation lists, agendas, sign-in sheets, and summaries of steering committee meetings, and public involvement meetings or outreach strategies. The 2006 NHMP's public process is also fully documented in Appendix B.

**Appendix C: Economic Analysis of Natural Hazard Mitigation Projects**

Appendix C describes the Federal Emergency Management Agency's (FEMA) requirements for benefit cost analyses in natural hazards mitigation, as well as various approaches for conducting economic analyses of proposed mitigation activities. This appendix replaces the 2006 NHMP's information about benefit cost analyses.

**Appendix D: Stakeholder Survey Report**

Appendix D provides a summary report of the survey administered to community stakeholders identified by the Marion County steering committee.

**Appendix E: Resource Directory**

This appendix lists state and federal resources and programs by hazard. Appendix E replaces the 2006 NHMP's Appendix A. Resources, programs, and contacts have been updated.

**Meeting:** Mid-Willamette Valley Natural Hazard Mitigation Plan Update  
Training Session I (Benton, Linn and Marion Counties)

**Date:** January 28, 2010

**Time:** 1:00 pm – 4:00 pm

**Location:** Salem

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## **AGENDA**

### **Part One: Introductions and Background**

1. Introductions
2. Workshop Objectives and Overview
3. The Oregon Partnership for Disaster Resilience

### **Part Two: What is Natural Hazards Mitigation Planning?**

1. What is Natural Hazards Mitigation Planning
2. Grant Opportunities
3. Plan Update Needs
4. Documentation Needs
5. Plan Update Process
6. Steering Committees
7. Public Involvement Strategies
8. Community Profile
9. Before Our Next Meeting...

### **Part Three: Steering Committee Meetings**

1. Public Involvement Strategies Exercise
2. Community Profile Review (For Marion County)

## **2010 Natural Hazard Mitigation Plan Update Region 3: Benton, Linn and Marion Counties**

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### Issue Summary

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A Natural Hazard Mitigation Plan (NHMP) forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. It creates a framework for risk-based decision making to reduce damages to lives, property, and the economy from future disasters.

Jurisdictions with Federal Emergency Management Agency (FEMA) approved mitigation plans are eligible for federal grant funding to implement those mitigation items identified in the plan.

However, jurisdictions are required to review, update, and re-seek FEMA approval of their plans every five years in order to maintain grant eligibility.

The planning process is as important as the plan itself, especially for multi-jurisdictional mitigation plans. Consensus built by including stakeholders from communities throughout each respective county improves both the plan and plan implementation process.

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### Linn County Natural Hazard Mitigation Plan Update

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The Benton, Linn and Marion County Natural Hazard Mitigation plans were adopted in 2005 and 2006 and are due for their 5-year update by late 2010 and early 2011. Updating the mitigation plan is a requirement for maintaining eligibility for the Federal Emergency Management Agency's Pre-Disaster Mitigation and Hazard Mitigation Grant Programs. This project is being funded in part with Pre Disaster Mitigation Grant funding from the Federal Emergency Management Agency.

The NHMP Update process consists of four stages, each described briefly below:

#### **Stage I – Getting Started**

- Contact the Steering Committee members (jurisdictions and stakeholders that participated in the 2005-06 process) and identify potential new participants.
- Complete a thorough review of the current mitigation plan to identify specific update needs.
- Develop a work plan for each county.
- Develop a public involvement strategy including, but not limited to, stakeholder surveys, public information workshops, and press releases.

#### **Stage II – Review and Update the Risk Assessment**

##### **Steering Committee Meeting 1 – Kick-off**

- Reconvene the Steering Committee and hold a kick-off meeting, the purpose of which is to cover the NHMP planning process, the proposed work plan, and the roles and responsibilities of OPDR, the county leads, and the Steering Committees.

##### **Steering Committee Meeting 2 – Risk Assessment**

- Review the existing county NHMP and update areas as necessary (i.e. hazard history, vulnerability assessment, new community assets, etc.).
- Review all existing mitigation measures identified in the plan and will document the current status of each of the mitigation measures identified in the plan.
- Identify data limitations (including maps) in the existing county NHMP that may be addressed in the current plan.
- Convene the second Steering Committee meeting. “Reviewing the Risk Assessment.”

### **Stage III – Review and Update the Mitigation Strategies**

#### **Steering Committee Meeting 3 – Mitigation Strategies**

- The Steering Committee will review and amend the existing NHMP’s Goals and Objectives as needed.
- The Steering Committee will review action items in the existing NHMP that were not implemented and ascertain the cause. The group shall decide to defer, delete, or amend each item.
- Discuss new mitigation actions with the Steering Committee

### **Stage IV - Review and Update the Implementation and Maintenance**

#### **Steering Committee Meeting 4 – NHMP Implementation and Maintenance**

- Evaluate each plan’s implementation strategy since its adoption. This evaluation will focus on what has been accomplished, what could be improved, and how mitigation could be better integrated into existing plans, policies, and programs
- Present findings and recommendations to the Steering Committee.
- The Steering Committee will determine the method and schedule used to monitor, evaluate, prioritize, implement, and update the plan.
- The Steering Committee will identify public involvement strategies for the five-year duration of the 2010 county plans.

### **Stage V – Finalize the Plan Update**

- Prepare a draft NHMP, to be reviewed with the Steering Committee.
- Draft and present a memo to the Steering Committee detailing changes made to the NHMP.
- OPDR will conduct a final FEMA crosswalk to determine whether the plan meet’s FEMA’s requirements.
- Upon pre-approval OPDR will prepare local adoption documents for each county.

### **Stage VI – Convene the Coordinating Body**

- The Steering Committee, including representatives from all participating jurisdictions, shall continue to meet as depicted in the NHMP.
- The Steering Committee shall document all meetings accordingly.

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#### **Steering Committee Involvement**

OPDR seeks to closely involve the Steering Committee throughout the NHMP update process. Involvement will primarily take the form of telephone conversations, e-mail exchanges, and/or face-to-face meetings.

The Steering Committees will be tasked with ensuring that there is adequate stakeholder representation from the respective communities. OPDR will always provide due dates for any review or edits asked of the Steering Committees, and requests that the Steering Committee abides by these due dates whenever possible.

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#### **Project Outcome**

Our primary measure of success for this project will be the adoption of an updated Natural Hazards Mitigation Plan by August 2010 for Benton, Linn and Marion counties. Ultimately it will be the process communities go through in the planning effort and the eventual implementation of the plans, not the plans themselves, which will be the true indicators of success resulting from this project.

Insert Sign-In Sheet here.





**Meeting:** Marion County Natural Hazard Mitigation Plan Update  
Steering Committee Meeting

**RE:** Stage 2: *Reviewing the Risk Assessment*

**Date:** Wednesday, March 3, 2010

**Time:** 9:00 am – 11:30 am

**Location:** Keizer Civic Center, (930 Chemewa Road NE, Keizer)

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## **AGENDA**

### **Part One: Introduction**

1. Warm Up and Introductions
2. Meeting Overview
3. Stage 1 Review:
4. Public involvement strategies
5. Stakeholders
6. What is a Risk Assessment

### **Part Two: Risk Assessment Review**

1. Hazard Profiles
2. Vulnerability Assessment
3. Risk Analysis

### **Part Three: Meeting Conclusion and Next Steps**

1. Next Meeting: April TBD
2. Stakeholders Survey – Coming Soon!
3. Review the Action Items



# Flood Hazard Updates

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Flooding occurs when climate (or weather patterns), geology, and hydrology combine to create conditions where water flows outside of its usual course. In Marion County, geography and climate combine to create chronic seasonal flooding conditions.

## Causes and Characteristics

- No Changes to flood types – flood types are still riverine and urban.
- Under the heading “Characteristics”, is a new description about characteristics of flooding. The new paragraphs are from the “Region 3: Mid/Southern Willamette Valley Regional Profile. January, 2009” (Oregon State Natural Hazards Mitigation Plan).
  - When most serious flooding occurs – Dec. and Jan.
  - These are associated with La Nina conditions, which result in prolonged rain and rapid snow melt on saturated or frozen ground.
  - This influx of water causes streams to back up and flood communities.
  - Added was a description: along with spring snowmelt, development has contributed to the severity of normal stream cycles.
  - Water flows more quickly over logged forestland, so that more rainwater flows into streams and rivers.
  - Urbanization and stormwater runoff have an impact on Willamette Valley flooding. Undersized culverts, bridge clearance, substandard dikes, levees, and debris dams are also problematic.
  - Sheet flooding occurs from agricultural land; but, such flood areas are not usually depicted on federal Flood Insurance Rate Maps (because of distance from source river).

## How are Hazard Areas Identified

- No Changes

## History of Hazard in Marion County

- January '05 and December '06 flood events were added from the Oregon State Natural Hazards Mitigation Plan

## Probability of Future Occurrence

- The Oregon State Natural Hazards Mitigation Plan provides a probability assessment of **high**. The previous plan did not contain an assessment, only stated that there was chronic flooding in Marion County. The Oregon State Natural Hazards Mitigation Plan defines a high probability as: one incident happening within a 10-35 year timeframe.

## Vulnerability Assessment

- The Oregon State Natural Hazards Mitigation Plan indicates that Marion County is **moderately** vulnerable to future flood events. This means that 1-10% of the population is likely to be effected by future flooding.

# Wildfire Hazard Updates

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Wildfires are fires that burn uncontrollably in a natural setting (e.g., a forest, or grassland). Vulnerability to wildfires exists where development pushes into what is known as the “wildland-urban interface”. The wildland-urban interface essentially consists of all developed areas that are in close proximity to wildland areas that have a natural risk of wildfire.

## Causes and Characteristics

- 2 definitions describing wildfires have been added:
  - Wildfire: a fire that burns uncontrollably in a natural setting (e.g., a forest, or grassland).
  - In describing the history of wildfires, it was added that the wildfires listed were considered “major”. Meaning that they burned a large land area (> 10,000 acres), and posed a threat to citizens and property of the region.

## How are Hazard Areas Identified

- No Changes

## History of Hazard in Marion County

- One significant addition - The 2006 McLean Creek Fire: 50,000 acres burned in Baker County.

## Probability of Future Occurrence

- The Oregon State Natural Hazards Mitigation Plan provided a probability assessment of **moderate**. The previous plan did not contain an assessment. OR-SNHMP (Region 3) defines a moderate probability as probable that Marion County will experience one incident of wildfire within the next 35-75 years.

## Vulnerability Assessment

- The Oregon State Natural Hazards Mitigation Plan indicates that Marion County is **moderately** vulnerable to future wildfire events. This means that 1-10% of the population is likely to be effected by future wildfires.
- A list of vulnerable communities in Marion County was added from the Marion County Community Wildfire Protection Plan.
- A list of “Communities at Risk”, or communities that are not within a taxing fire districts, and are “surrounded by the wildland-urban interface is included from the “Marion County Wildfire Protection Plan”.

# Landslide Hazard Updates

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The term “landslide” describes a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. The materials may move by falling, toppling, sliding, spreading, or flowing.

## Causes and Characteristics

- Replaced direct and indirect costs of landslide damage in the U.S. with an estimate of economic losses in Oregon.
- Included “on-site” and “off-site” landslide hazards as further characteristics of slow and rapidly moving landslides.
- Used the USGS 2004 Landslide Fact Sheet to describe the different types of landslides, which is more extensive than the previous plan.
- Added photographs and images of landslide types from DOGAMI 2008 Fact Sheet and the USGS 2004 Landslide Fact Sheet.
- Landslide Causes are listed by overarching causes that are further specified in each category.
- Landslide Causes are then explained in conjunction of other natural hazards, such as seismic activity.

## How are Hazard Areas Identified

- Added information about geologic and geographic factors in determining landslide prone areas, as well as the role slope steepness plays in landslide hazards. This also includes a few sentences about the Oregon Department of Forestry Storm Impacts Study conducted after the 1996-97 landslide events.

## History of Hazard in Marion County

- Added December 2008 Presidential declared disaster for severe winter storm, record and near record snow, landslides, and mudslides for Clackamas, Clatsop, Columbia, Marion, Multnomah, Polk Counties, Tillamook, and Yamhill Counties.
- Included a map of identified landslides from the Region 3 profile in the Oregon State Natural Hazards Mitigation Plan from 2009.

## Probability of Future Occurrence

- This is a new section. It was updated using information from the Oregon State Natural Hazards Mitigation Plan landslide section: probability. However, Marion County did not provide a probability assessment of a landslide occurrence. Therefore, based on available information Marion County was given a **moderate** probability, which indicates it is probable that Marion County will experience one incident of landslide within 35 to 75 years.

## Vulnerability Assessment

- Included information about vulnerabilities from the OR-SNHMP (Region 3). Again, there is no vulnerability assessment provided by Marion County. Based on known information Marion County was given **low** vulnerability to landslides indicating that less than 1% of the population would be affected if a landslide did occur.

# Drought Hazard Updates

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A drought is a long period of abnormally low precipitation that persists long enough to produce a serious hydrologic imbalance. Drought is a normal part of virtually every climate on the planet, even relatively wet climates. It is the most complex of all natural hazards, and it affects more people than any other hazard. Analysis shows that it can be as expensive as floods and hurricanes.

## Causes and Characteristics

- Added how drought is measured in terms of water availability in a defined geographical area by numerical index found in the Oregon Drought Severity Index.
- Moved the Characteristics of Drought in Oregon: Weather Patterns to this section. This characterizes drought as a weather pattern and is further tied into El Niño events and its effect on Oregon’s weather patterns.

## How are Hazard Areas Identified

- Added a short blurb stating that drought is typically not a confined natural hazard, in that it often affects more than one county or region.

## History of Hazard in Marion County

- Added periods of moderate to severe drought conditions occurring in the Willamette Valley between 2005 and 2010 specific dates being: July 8-October 28, 2006; June 2-September 29, 2007; July 26-August 16, 2008; June 27-October 17, 2009. These periods of drought were determined from the Drought Severity Index.
- Included a table of significant droughts for Oregon from 1904 to 2001 found in *The Oregon Weather Book*, 1999.

## Probability of Future Occurrence

- This is a new section. It was updated using information from the Oregon State Natural Hazards Mitigation Plan drought section: probability. At this time Marion County has not provided a probability of the future occurrence of a drought. Based on available information an assigned probability of **high** has been given to Marion County. This means that it is likely that Marion County will experience at least one episode of drought in the next 10 to 35 years.

## Vulnerability Assessment

- This section expands on the definition of a vulnerability assessment and includes updated information from the Oregon State Natural Hazards Mitigation Plan. It further expands on vulnerable sectors in Marion County, such as agriculture and forests. Based on available information Marion County’s vulnerability to drought is **moderate**, which indicates that 1-10% of the community would be affected by severe and sustained drought conditions.

# Volcanic Eruption Hazard Updates

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The primary threat to lives and property from active volcanoes is from violent eruptions that unleash tremendous blast forces, generate mud and debris flows, and produce flying debris and ash clouds. The immediate danger area in a volcanic eruption generally lies within a 20-mile radius of the blast site. One of the most serious hazards from an eruption is the rock (*bombs*) and dust-sized ash particles - called *tephra* - blown into the air. The dust-sized ash particles can travel enormous distances and are a serious by-product of volcanic eruptions.

#### Causes and Characteristics

- Included a sentence about the cause of the Cascade Range with a picture illustrating the process of the Juan de Fuca plate sinking beneath the North American plate from USGS/CVO 1999.
- Removed two paragraphs relating to the effect of eruptions and examples (some of this information was incorporated into other sections).
- From the 2009 OR-SNHMP eruptive and post-eruptive hazards are then characterized in the following categories: ash fall (includes a map of regional tephra fall from USGS “Volcano Hazards in the Mt. Jefferson Region”), lava flows, pyroclastic flows and surges, lahars and debris flows, and landslides.
- Included a picture of Mount Jefferson.

#### How are Hazard Areas Identified

- Included additional information about mapping prehistoric rock deposits to learn about past volcanic occurrences. By mapping these areas, it helps scientists better understand volcanic hazards and provides us with better informed mitigation strategies.
- Changed only historical incidence to recorded incidence.

#### Probability of Future Occurrence

- This is a new section. It was updated using information from the Oregon State Natural Hazards Mitigation Plan and includes a probability assessment of volcanic eruption done by Marion County (ranked as **low**, no volcanic activity for at least 75 years). There is also a chart included from the Oregon State Natural Hazards Mitigation Plan listing odds of each volcano-related hazard in Marion County.

#### Vulnerability Assessment

- This section expands on the definition of a vulnerability assessment and includes updated information from the Oregon State Natural Hazards Mitigation Plan. Marion County did provide a vulnerability score of **moderate**, indicating 1-10% of the population would be affected by volcanic eruption. This formula takes into account the historical occurrences of the hazard, the vulnerability of assets to the hazard, the impact of a worst-case scenario, and the probability of future occurrence.

# Earthquake Hazard Updates

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Most large earthquakes in the Pacific Northwest are shallow crustal, deep intraplate, or subduction zone earthquakes. These earthquakes can have great impact on Oregon communities. With its location in the Pacific Northwest, Marion County is susceptible to both intraplate and subduction zone **earthquakes**. Earthquake characteristics include ground shaking, earthquake-related landslides, ground liquefaction, and ground amplification.

## Causes and Characteristics

- No changes

## How are Hazard Areas Identified

- Five new maps were added: Amplification map, liquefaction map, earthquake landslide map, ground peak acceleration probability map, fault and land fold assessment map. These maps help us identify earthquake hazards. They were provided by William J. Burns, R. Jon Hofmeister, and Yumei Wang.

## History of Hazard in Marion County

- Added 5.0 earthquake in Salem on November 16, 1957, which caused minor Damage and brief power disruptions. Info on this was provided by a report from the US Department of Commerce.

## Probability of Future Occurrence

- There is an average of one damaging earthquake every nine years in Marion County. We have determined that there is a **high** probability of a damaging earthquake in the next 35 years. This determination was made by us using scoring criteria set-forth by FEMA.

## Vulnerability Assessment

- The Oregon State Natural Hazards Mitigation Plan indicates that Marion County is **highly** vulnerable to future wildfire events. This means that more than 10% of the population is likely to be effected by future earthquakes.

# Windstorm Hazard Updates

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The most frequent surface winds in Oregon are from the southwest. These widespread winds are associated with storms moving onto the coast from the Pacific Ocean. Winds coming from the south are the most destructive. The Columbus Day Storm of 1962 was an example of this type of windstorm. Chinook winds are strong easterly winds coming out of the Columbia Gorge. Chinook is a native Indian word meaning “snow eater.” The Chinook wind is a warm dry wind that often leads to the rapid disappearance of snow, and can gust up to 100 miles per hour. The gusts are caused by rapid atmospheric pressure changes. Studies have shown that these changes can result in physiological and psychological reactions in humans such as headaches and increased irritability. West winds generate from the Pacific Ocean and are strong along the coast, but slow down inland due to the obstruction of the Coastal and Cascade mountain ranges.

## Causes and Characteristics

- Added maps and descriptions of common major windstorm tracks that have both region-wide and localized impacts. These maps were provided by Wolf Reed from the Office of the Washington State Climatologist.

## How are Hazard Areas Identified

- No changes

## History of Hazard in Marion County

- Added January 9, 1880 windstorm— the second most severe in Marion County History. Caused major tree blowdown, with damage to the Statehouse, Willamette University, and most other structures.
- Added December 1-3, 2007 windstorm. Still need damage figures for Marion County.
- Revised the date for the Silverton Tornado, from 1991 to 1997

## Probability of Future Occurrence

- We conducted a probability assessment for the last 130 years, based on significant windstorms every 9-12 years, and major storms (on the order of the Columbus Day Storm or 1880 storm) every 100 years. We determined that there is a **high** probability of a significant windstorm in the next 35 years. This determination was made by us using scoring criteria set-forth by FEMA.

## Vulnerability Assessment

- This section expands on the definition of a vulnerability assessment and includes updated information from the Oregon State Natural Hazards Mitigation Plan. Based on available information Marion County’s vulnerability to windstorms is **high**, meaning that greater than 10% of the population is expected to be impacted by future windstorms.

# Severe Winter Storm Hazard Updates

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Severe winter storms affecting Marion County typically originate in the Gulf of Alaska or in the central Pacific Ocean. These storms are most common from October through March. Marion County's average precipitation is 40.35 inches. The National Climatic Data Center has established climate zones in the United States for areas that have similar temperature and precipitation characteristics. Oregon's latitude, topography, and proximity to the Pacific Ocean give the state diversified climates.

Severe winter storms are characterized by significant snowfall, ice accumulation and extreme cold. All of these effects result from cold air being drawn into Western Oregon through the Columbia Gorge.

## Causes and Characteristics

- No changes

## How are Hazard Areas Identified

- No changes

## History of Hazard in Marion County

- Combined ice storms, snow storms and extreme cold events into one category.
- Added January and February 2008 Detroit/Idenha snowstorm. Over 12 ft. of snow fell, requiring National Guard assistance.
- Added December 2008 snowstorm, in which damages were over \$43 per capita for Marion County. The snowstorm and associated landslides and mudslides required a federal disaster declaration.

## Probability of Future Occurrence

- There is one severe winter storm every 7 years on average. Based on this, we have determined that the probability of a severe winter storm in the next 35 years is **high**. This determination was made by us using scoring criteria set-forth by FEMA.

## Vulnerability Assessment

- This section expands on the definition of a vulnerability assessment and includes updated information from the Oregon State Natural Hazards Mitigation Plan. Based on available information, Marion County's vulnerability to winter storms is **high**, meaning that greater than 10% of the population is expected to be impacted by future winter storms.



**Insert Sign-In Sheet Here.**



## AGENDA

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**Meeting:** Marion County Natural Hazard Mitigation Plan Update

**RE:** Steering Committee Meeting  
Stage 3: *Reviewing the Mitigation Strategy*

**Date:** Thursday, April 15, 2010

**Time:** 8:30 am – 12:30 pm

**Location:** Marion County Public Works Building, 5155 Silverton Road NE, Salem

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**Part One: Outline & Stage 3 Overview**

1. Outline of Events
2. Mitigation Strategy Overview

**Part Two: Reviewing the Mission Statement and Mitigation Goals**

3. Mission Statement Review
4. Mitigation Plan Goals Review

**Part Three: Action Item Identification**

5. Discuss CPW Team Evaluation Process
6. Discuss Effective Action Items
7. Review Proposed Action Items
8. Review Omitted Action Items

**Part Four: Closing Remarks**

9. Next Steps

Insert Sign-In here.

## AGENDA

### Marion County NHMP Steering Committee

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**Meeting:** Marion County Natural Hazard Mitigation Plan Update

**RE:** Stage 4: *Reviewing the Plan Maintenance Strategy*

**Date:** Tuesday, May 11, 2010

**Time:** 1:00 – 5:00 pm

**Location:** Marion County Public Works Building, 5155 Silverton Road NE, Salem

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**Part One: Outline & Stage 4 Overview**

1. Outline of events
2. Maintenance and implementation memo overview

**Part Two: Plan Implementation and Maintenance**

1. Plan implementation/maintenance recommendations
2. Finalize public involvement strategies
3. Overview of funding sources
4. Cost/benefit analysis overview
5. Action Item prioritization activity

**Part Three: Closing Remarks**

1. FEMA plan submittal process
2. Next steps

Insert Sign-in here.

# 2006 Plan Development Public Participation Process

Public participation is vital to the value, effectiveness, and usefulness of any plan. To produce a plan that fits the needs of Marion County agencies, businesses, and residents, Marion County engaged the public in three primary ways. A steering committee comprised of individuals representing different divisions in Marion County and the American Red Cross worked together to produce the plan. The plan's project managers conducted stakeholder interviews to target the specialized knowledge of individuals whose work may be affected by natural hazards and whose work deals with natural hazards on a regular basis. The project managers held a community open house to inform the public about natural hazards that occur in Marion County and to identify potential hazard mitigation strategies.

## Steering Committee

The Steering Committee was the guiding force behind the Natural Hazards Mitigation Plan. The knowledge and background information provided by this committee laid a foundation and structure for the project. The steering committee assisted the project managers with major decisions including goal setting and identifying pertinent action items.

## Methodology

Steering Committee members possessed familiarity with the Marion County community and how it is affected by natural hazard events. The steering committee guided the plan through several steps including goal formation, action item development, stakeholder identification, and information sharing to make the plan as comprehensive as possible. The steering committee meet on the following dates:

- September 21, 2004
- October 19, 2004
- December 7, 2004
- January 11, 2005
- February 24, 2005
- March 15, 2005

The steering committee formed under the guidance of John Vanderzanden, Marion County Emergency/Safety Manager and Michael Rybka, Marion County Emergency Management Deputy Director, with input from Mark Fancey, the plan's project manager. The steering committee invested considerable time into the plan. Members of the steering committee include:

## Marion County Steering Committee

<b>Name</b>	<b>Organization</b>
Fancey, Mark	Project Manager, MWVCOG
Ingram Moore, Judith	Project Manager, MWVCOG
Hales, Gary	Marion County Risk Management
Jackson, Warren	Marion County Building Division
McCracken, Sue	Marion County Public Information
Milliman, Lisa	Marion County Planning
Pearson, Burnie	Marion County GIS
Pech, Evelyn	Marion County Road Operations
Rowland, Krista	Marion County Emergency Management
Sasaki, Les	Marion County Planning
Stevenson, Roger	Salem Fire/Emergency Management
Thorburn, Matt	Marion County Public Works
Vanderzanden, John	Marion County Emergency Management
Williamson, Roger	American Red Cross

## Stakeholder Interviews

The second form of public participation was stakeholder interviews. The interviews offered alternative ways for Marion County residents and interested groups and organizations to participate in the plan's development. The project managers telephoned and interviewed individuals who possess knowledge of natural hazards issues in Marion County. These individuals provide insight into the various natural hazard events that occur in Marion County, what factors make a given hazard particularly damaging, which mitigation activities are already established, which activities proved successful in the past, and what future actions might work well to less the impacts of natural hazards events on the county.

## Methodology

The project managers conducted stakeholder interviews from September 2004 through April 2005. The project managers telephoned the stakeholders and asked a series of standard questions. The questions are as follows:

1. How have natural hazards affected your organization historically?
2. What issues regarding natural hazards may you confront in the future?

3. Is your facility designed to withstand damages from natural hazards (i.e. is the building in a floodplain, does it meet seismic standards, etc.)
4. Has your organization ever been involved in natural hazard mitigation projects?
5. What types of mitigation activities would assist in reducing risk and preventing loss from future natural hazard events?
6. How can your organization contribute to regional coordination to reduce risk from natural hazards?
  - a. Does your organization have facilities that could be used as shelter sites? Do you have the necessary safety equipment to support community members during a disaster (generator, etc.)?
  - b. Do you conduct public outreach programs?
  - c. Are there any partnership opportunities for implementing mitigation projects that would benefit your organization as well as the community as a whole?
7. Which hazards do you (your organization) feel vulnerable to and why?

The project managers compiled the information received from these interviews into various sections of the plan, particularly each of the hazard-specific sections. Paper copies of the interview outcomes were compiled into a standard form and are available by contacting:

Mid-Willamette Valley Council of Governments  
105 High Street SE  
Salem, OR 97301-3667  
tel: 503-588-6177  
fax: 503-588-6094  
email: [jingram@mwvcog.org](mailto:jingram@mwvcog.org)

Note: The information recorded in the stakeholder interviews was memorialized by the plan's project managers as accurately as possible. The Mid-Willamette Valley Council of Governments makes no representations, express or implied, as to the accuracy of the information. This information is provided with the understanding that it is not guaranteed to be correct or complete, and conclusions drawn from such information are the sole responsibility of the reader.



### Marion County Natural Hazards Mitigation Plan Stakeholders

Last Name	First Name	Agency/Affiliation
Anderson	Sven	Park Manager, Detroit State Parks Management District
Bartels	Larry	Chief, Drakes Crossing RFPD
Bauer	Gary	Government Relations, Northwest Natural
Bemrose	Donald	Chief, Jefferson RFPD
Bernt	Dan	Public Works Director, City of Mt. Angel
Bunch	Allen	Risk Management, Chemeketa Community College
Carriger	Jack	Chief, Stayton RFPD
Cosgrove	Bryan	Manager, City of Silverton
Disch	Donna	Office of State Fire Marshall
Dryden	Jon	Chief, Hubbard RFPD
Eden	Scott	Coordinator, Pudding River Watershed Council
Eichorn	Ernie	Chemawa District, BPA
Eubanks	Don	Chief, Stayton Police Department
Fleck	Don	Chief, Mt. Angel RFPD
Ford	Dave	Manager, Portland General Electric
Frank	Greg	Chief, Keizer RFPD
Glaze	Larry	Superintendent, Gervais School District
Godfrey	Reed	Chief, St. Paul Fire District
Good	Vonnie	Risk Management, Salem-Keizer Public Schools
Gooding	Kaye	Administrator/Recorder, City of St. Paul
Hari	Roy	Chief, Marion County Fire District #1
Halemeier	David	Hydrologist, Detroit Ranger District, Willamette National Forest
Herman	Vince	Chief, Silverton RFPD
Hollenstein	B.J.	Superintendent, North Santiam School District
Iverson	Paul	Chief, Monitor RFPD #58
Johnston	Doris	Regional Community Manager, Pacific Power
Kinney	Dave	Administrator, City of Mills City
Kissler	Rob	Public Works Director, City of Keizer
Knode	Mike	Chief, Salem Fire Department
Krall	Matthew	Development Coordinator, City of Jefferson
Long	Tom	Manager, Salem Airport
Lovell	Tom	Plant Operations Manager, Cascade School District
Matter	Paul	District Ranger, Detroit Ranger District, Willamette National Forest
McMahan	Alan	Chief, Sublimity Emergency Services FD

### Stakeholders (continued)

Last Name	First Name	Agency/Affiliation
Montague	Ellen	Communications, Willamette Education Service District
Nevin	Dan	Road Engineer, Cascade Resource Area BLM
Ohrt	Leland	Chief, Mill City RFPD
Paradis	Pete	Maintenance Supervisor, Silver Falls School District
Remy	Jon	Chief, Turner Fire Department
Rust	Terry	Public Works Superintendent, City of Turner
Shull	Bruce	Superintendent/Principal, St. Paul School District
Sphoon	Tim	Chief, Aumsville RFPD
Straughan	Robin	Marion Soil & Water Conservation District
Swanson	Gary	Chief, Gates RFPD
Timmons	Eric	Park Manager, Willamette Mission State Park District
Tiwari	Frank	Public Works Director, City of Woodburn
Walker	Ann	Coordinator, National Fire Plan, ODF
Wylie	Dennis	Park Manager, Champoeg State Heritage Area
Yoder	Rod	Chief, Aurora RFPD
Zimmerman	Mary	Consumers Power, Inc.

### Community Open House

The third method of public participation was a community open house. The general public as well as all of the county's stakeholders was invited to participate by addressing concerns relating to natural hazards, and discussing ideas for mitigation strategies. Through involvement from the community, the plan receives greater community support and can then more specifically fit the needs of Marion County residents.

### Methodology

The community open house was held on April 14, 2005. The open house was advertised through public announcements sent to local newspapers and radio stations. One local radio spot was aired on Salem's only FM station. Flyers were posted in fire departments, libraries, and school districts. Flyers and a newsletter were sent to government agencies and other interested groups. Personal invitations were sent to stakeholders.