

Marion County, Oregon

Multi-Jurisdictional Natural Hazards Mitigation Plan

Plan for:

Marion County and the Cities of:

Aurora

Keizer

Silverton

Woodburn

Prepared by:

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- Community Planning Workshop at the University of Oregon's Community Service Center
- Oregon Emergency Management
- Federal Emergency Management Agency, Region X
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Marion County Natural Hazards Mitigation Plan

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Executive Summary

Marion County developed this multi-jurisdictional Natural Hazards Mitigation Plan (NHMP) in an effort to reduce future loss of life resulting from natural hazards. This plan was developed with and for the following jurisdictions: Marion County and the cities of Aurora, Keizer, Silverton, and Woodburn. Note that while the cities of Aurora, Keizer, Silverton, and Woodburn were not included in Marion County's 2005 Natural Hazards Mitigation Plan, each of the four jurisdictions completed addenda to the Marion County NHMP in 2009. This planning effort incorporates those city addenda by reference. In addition, the plan includes addenda updates for each of the four cities.

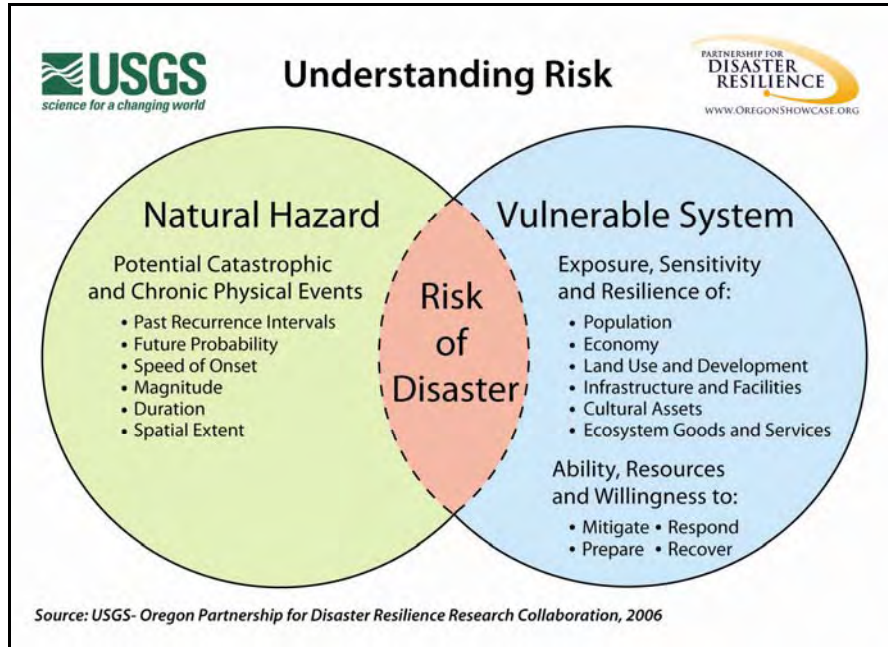
It is impossible to predict exactly when natural hazards will occur, or the extent to which they will affect the community. However, with careful planning and collaboration among public agencies, private sector organizations, and citizens within the community, it is possible to create a resilient community that will benefit from long-term mitigation planning efforts.

Natural hazard mitigation is defined as a method of permanently reducing or alleviating the losses of life, property, and injuries resulting from natural hazards through long and short-term strategies. Example strategies include policy changes, such as updated ordinances; projects, such as seismic retrofits to critical facilities; and education and outreach to targeted audiences, such as Spanish speaking residents or the elderly. Natural hazard mitigation is the responsibility of individuals, private businesses and industries, state and local governments, and the federal government.

Why Develop this Mitigation Plan?

This natural hazard mitigation plan is intended to assist Marion County and the cities of Aurora, Keizer, Silverton, and Woodburn reduce the risk from natural hazards by identifying resources, information, and strategies for risk reduction. It will also help guide and coordinate mitigation activities throughout the county. The figure below is utilized throughout the plan to illustrate the concept of risk reduction.

Figure i.1 Understanding Risk



A natural hazard mitigation plan can assist jurisdictions in understanding what puts the community at risk. By identifying and understanding the relationship between natural hazards, vulnerable systems, and existing capacity, communities in Marion County become better equipped to identify and implement actions aimed at reducing the overall risk to natural hazards.

Who Participated in Developing the Plan?

In the fall of 2008, the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center developed a Pre-Disaster Mitigation Planning Grant proposal in partnership with Oregon Emergency Management (OEM) and communities in the Willamette Valley to update local mitigation plans. FEMA awarded the grant in the summer of 2009, and Marion County's plan update process began in January, 2010. A graduate student team from the University of Oregon's Community Planning Workshop facilitated the plan update process and documented efforts, while OPDR oversaw the planning process and completed final edits to the plan.

The 2010 Marion County Natural Hazard Mitigation Plan is the result of a collaborative effort between the county, cities, special districts, citizens, public agencies, non-profit organizations, the private sector and regional organizations. A project steering committee guided the plan development process. The steering committee was comprised of representatives from the following organizations.

- Marion County Public Works
- Silverton Police Department
- Marion County Board of Commissioners

- Marion County Information Technology
- American Red Cross
- Marion County Emergency Management
- City of Keizer
- City of Salem
- Marion County Planning Division

The Marion County Emergency Manager was designated as the plan’s convener and will take the lead in implementing, maintaining and updating the plan. Public participation played a key role in the development of goals and action items. Public involvement in the planning process was achieved by including members from different organizations to provide representation in the steering committee meetings and engaging the public in a final plan review. In addition, OPDR and the Community Planning Workshop distributed a community stakeholder survey to identify the perceptions of natural hazard mitigation planning in the county and assess the extent to which organizations are working to achieve mitigation goals. Results of the survey are documented in an independent report in Appendix D.

What is the County’s Overall Risk to Hazards?

Oregon currently uses a county by county methodology to assess the probability of and vulnerability to natural hazard events. The hazard annexes in Volume II describe each hazard’s probability of future occurrence within Marion County, as well as the county’s overall vulnerability to each hazard. Probability estimates are based on the frequency of previous events, and vulnerability estimates are based on potential impacts of the hazard to Marion County. Table i.1 below summarizes the hazard probability and vulnerability scores for Marion County and each of the cities referenced herein.

Table i.1: Marion County Risk Analysis Summary

| Hazard | Marion County | | City of Aurora | | City of Silverton | | City of Keizer | | City of Woodburn | |
|--------------|---------------|---------------|----------------|---------------|-------------------|---------------|----------------|---------------|------------------|---------------|
| | Probability | Vulnerability | Probability | Vulnerability | Probability | Vulnerability | Probability | Vulnerability | Probability | Vulnerability |
| Drought | High | High | Moderate | Moderate | High | Low | Low | Low | High | Low |
| Earthquake | High | High | High | High | High | High | High | High | High | High |
| Flood | High | High | High | Moderate | High | Moderate | High | Moderate | High | Moderate |
| Landslide | High | Moderate | Low | Moderate | Moderate | Moderate | Low | Low | Low | Moderate |
| Volcano | Low | Moderate | Low | Moderate | Low | Moderate | Low | Moderate | Low | Moderate |
| Wildfire | Moderate | Moderate | Low | Moderate | Moderate | Moderate | Low | Moderate | Low | Moderate |
| Windstorm | High | High | High | High | High | High | High | High | High | High |
| Winter Storm | High | High | High | High | High | High | High | High | High | High |

What is the Plan's Mission?

The mission of the Marion County Natural Hazards Mitigation Plan is to: *create a Disaster Resilient Marion County.*

What are the Plan Goals?

The plan goals describe the overall direction that the participating jurisdictions' agencies, organizations, and citizens can take toward mitigating risk from natural hazards.

Goal #1: Public Awareness

Increase awareness of natural hazard risks, emergency notification methods, and resources for citizen preparedness.

Goal #2: Education

Educate the public on how to successfully mitigate and prepare for a natural disaster in order to minimize property damage and loss of life.

Goal #3: Risk Reduction

Minimize risks to life, property, the environment, and the economy from natural hazards.

Goal #4: Funding and Implementation

Identify potential funding sources to implement mitigation projects.

Goal #5: Partnerships and Coordination

Create, maintain and enhance partnerships with stakeholders, adjacent jurisdictions, and public and private agencies' risk management activities.

Goal #6: Natural Resources Utilization

Use natural resources, watershed planning, and land use planning to reduce long-term costs and maximize effectiveness.

Goal #7: Plan Integration

Integrate natural hazard mitigation activities, where appropriate, with existing plans and policies.

How are the Action Items Organized?

The action items are organized within an action matrix (located at the end of this summary), which lists all the multi-hazard and hazard-specific action items included in the mitigation plan. Data collection and research and the public participation process resulted in the development of these action items. The Action Item Matrix portrays the overall plan framework and identifies linkages between the plan goals and actions. The matrix documents the title of each action along with the coordinating organization, timeline, and the plan goals addressed.

How will the Plan be Implemented?

The plan maintenance section of this plan details the formal process that will ensure that the Marion County Natural Hazards Mitigation Plan remains an active and relevant document. The plan will be implemented, maintained and updated by the plan's convener, the Marion County Emergency/Safety Manager, and the Marion County natural hazards mitigation plan steering committee. The plan maintenance section includes a schedule for monitoring and evaluating the plan annually and producing a plan revision every five years. This section also describes how the communities will integrate public participation throughout the plan maintenance process. Cities and special districts developing addendums to the county plan will also designate a convener and will work closely with the county convener to keep the plans coordinated.

Plan Adoption

After the plan is locally reviewed and deemed complete, the Marion County Emergency/Safety Manager will be responsible for submitting it to the State Hazard Mitigation Officer at Oregon Emergency Management. Oregon Emergency Management will then submit the plan to the Federal Emergency Management Agency (FEMA - Region X) for review. This review will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201. Upon acceptance by FEMA, the county and named cities will adopt the plan via resolution. At that point the county will extend their eligibility for the Pre-Disaster Mitigation Grant Program, the Hazard Mitigation Grant Program funds, and the Flood Mitigation Assistance program funds.

The individual jurisdiction's conveners will be responsible for ensuring local adoption of the Marion County multi-jurisdictional Natural Hazards Mitigation Plan and providing the support necessary to ensure plan implementation.

The accomplishment of the Natural Hazards Mitigation Plan goals and actions depends upon the maintenance of a competent steering committee and adequate support from the county and city departments reflected in the plan in incorporating the outlined action items into existing county plans and procedures. It is hereby directed that the appropriate county departments and programs implement and maintain the concepts in this plan. Thorough familiarity with this plan will result in the efficient and effective implementation of appropriate mitigation activities and a reduction in the risk and the potential for loss from future natural hazard events.

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | | |
|---------------|---|-----------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|--|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration | |
| Dam Safety #1 | Prepare updated high resolution, digitalized maps of dam failure inundation areas for the Silverton, Big Cliff, and Detroit reservoir dams. | GIS, Environmental Services | Public Works, Planning, Emergency Management, Local cities in inundation areas, Army Corps of Engineers | Ongoing | X | | X | | | | | |
| Dam Safety #2 | Actively encourage the Army Corps of Engineers to complete seismic vulnerability assessments for dams upstream of Salem and to make seismic improvements as necessary. | Emergency Management | Army Corps of Engineers | Ongoing | | | | X | | | | |
| Drought #1 | Connect local farmers and ranchers with organizations such as the local Soil and Water Conservation District, Oregon Department of Agriculture, and the USDA to educate them on water conservation methods they can implement to reduce the impact of droughts. | Environmental Services | Soil and Water Conservation District, OSU Extension, USDA, Oregon Department of Agriculture | Ongoing | | X | | | X | | | |
| Drought #2 | Partner with EarthWISE and local schools to implement water conservation strategies to maximize water use in schools and educate students about water conservation. | Environmental Services | Public Works, Marion County Schools, Oregon Green Schools Program | Ongoing | | X | | | X | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|---------------|--|----------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Drought #3 | Continue implementing the 'Marion County Water Resource Management Plan' (portion of the Marion County Comprehensive Plan). | Planning Department | Environmental Services, State Water Resources Department, Watershed Councils, Soil and Water Conservation District, and the Irrigation District | Ongoing | | | X | | | X | X |
| Earthquake #1 | Develop and publicize structural and nonstructural retrofits activities that county residents can implement to reduce their risk to seismic events. | Emergency Management | Planning, Public Works, Red Cross, FEMA | Ongoing | X | X | | | | | |
| Earthquake #2 | Identify county facilities vulnerable to earthquakes and develop appropriate actions to seismically retrofit them. | Marion County Public Works | Building Department, Planning Department, DOGAMI, FEMA | Ongoing | | | X | | | | |
| Earthquake #3 | Identify the most seismically vulnerable bridges on county roads, conduct a seismic assessment on them, and take steps to bring those that are out of compliance up to code. | Public Works/Engineering | Planning, Emergency Management, ODOT | LT | | | X | X | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|---------------|--|---------------------------|--|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Earthquake #4 | Promote earthquake awareness month activities for schools and large employers (e.g. employers with 250 or more employees). | Emergency Management | Public Works, Safety Committee, Marion County Risk, Red Cross, OEM | ST | | X | | | X | | |
| Flood #1 | Develop and implement a formal and regular drainage system maintenance program. | Environmental Services | Operations, USDA, Oregon Department of Agriculture | Ongoing | | | X | | | X | |
| Flood #2 | Create partnerships and facilitate riparian habitat restoration projects in flooding or erosion prone areas (e.g. Spongs Landing County Park). | Environmental Services | Marion County Parks Department, Watershed Councils, OSU Extension, Oregon Department of Fish and Wildlife, Oregon Department of Parks and Recreation | Ongoing | | | X | | X | X | |
| Flood #3 | Develop strategies with property owners to minimize future losses from repetitive flood loss areas. | Planning Department | Emergency Management, Environmental Services, Public Works, FEMA, OEM | Ongoing | | | X | | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | | |
|-------------|--|---------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|--|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration | |
| Flood #4 | Take steps to reduce Marion County's Community Rating System (CRS) rating to reduce flood insurance premiums in the county. | Planning Department | Public Works, Emergency Management, FEMA, OEM | Ongoing | X | | | | | | | |
| Flood #5 | Continue compliance with the National Flood Insurance Program (NFIP) through enforcement of local floodplain ordinances. | Planning Department | Building Inspectors, Road Operation, FEMA, OEM | Ongoing | | | X | | | | X | |
| Flood #6 | Install gauges in Mill Creek to collect flood data and obtain data from the City of Salem's flood gauges to improve flood warning. | Public Works | Planning, Emergency Management, Oregon Water Resources Department, USGS | Ongoing | | | | | | | X | |
| Flood #7 | Identify bridges in Marion County with flow blockage problems. | Public Works Operations | Planning, Environmental Services, Engineering, Army Corps of Engineers | LT | | | X | X | | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|--------------|--|---------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Flood #8 | Identify the location of existing levees in Marion County and implement a maintenance program with their owners and operators to ensure levees remain operable during flood events. | Planning | Environmental Services, GIS, Engineering, Army Corps of Engineers | LT | | | X | X | | | |
| Landslide #1 | Increase monitoring and evaluation of steep slopes around Marion County's most heavily traveled roads and continue monitoring of all forested slopes cleared for housing developments. | Public Works/Operations | Planning, Environmental Services, Engineering, ODOT, DLCDC | Ongoing | | | X | | | | |
| Landslide #2 | Repair ongoing slide problems on the Little North Fork River, and Abiqua Creek areas. | Public Works | Engineering, Operations, Planning, Environmental Planning, State and Federal highway administration, private logging companies, (e.g. Elk Horn Development) | LT | | | X | | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|-----------------------|--|---------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Volcanic Eruption #1 | Collaborate with county environmental health for immediate warnings to communities about degraded air quality following volcanic eruptions, particularly in areas with high concentration of vulnerable groups (e.g. retirement facilities and schools). | Emergency Management | Public Health, Environmental Health, Oregon Public Health | Ongoing | | | | | X | | X |
| Volcanic Eruption # 2 | Collaborate with USGS-CVO and related agencies to develop ash fall models that are specific to Marion County. | Emergency Management | GIS, DOGAMI, USGS, CVO | Ongoing | | | X | | X | | X |
| Wildfire #1 | Implement existing action items contained in the 'Action Plan' section of the <i>Marion County Community Wildfire Protection Plan</i> (Pgs. 37-43). | Fire Defense Board | Emergency Management, Fire Marshal, Oregon Department of Forestry | Ongoing | | | | X | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | | |
|-----------------|--|--|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|--|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration | |
| Wildfire #2 | Collaborate with county environmental health for immediate warnings to communities about degraded air quality following large-scale fire events, particularly in areas with high concentration of vulnerable groups (e.g. retirement facilities and schools). | Environmental Health | Emergency Management, Oregon Public Health, Oregon Department of Forestry | Ongoing | X | | | | | X | | |
| Windstorm #1 | Initiate a comprehensive program to reduce or eliminate tree hazards to all critical utilities in Marion County. This program includes a prioritization of critical facilities, an assessment of potential tree hazards, and a program to trim, and/or remove tree hazards in designated critical areas. | Public Works – Operations and Environmental Services | Planning, Parks Department, Utility Companies | Ongoing | | | X | | | | X | |
| Winter Storm #1 | Assure a sufficient supply of sand and anti-icing agent to use on priority and secondary transportation routes for a minimum of one major winter storm each year. | Public Works Operations | County Commission, ODOT | Ongoing | | | | X | | | | |
| Multi-Hazard #1 | Develop, publicize and maintain a comprehensive database of all declared and undeclared natural hazard incidents in Marion County. | Emergency Management | IT Department, FEMA, DLCD | Ongoing | X | X | | | | | | |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|-----------------|--|------------------------------------|--|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Multi-Hazard #2 | Complete a disaster recovery plan for Marion County. | Emergency Management | Public Works, Health Department, Businesses, NGOs | LT | X | | X | | | | |
| Multi-Hazard #3 | Enhance distribution of all hazard information, public emergency preparedness materials, and information on how individuals can mitigate their vulnerability to each hazard. | Emergency Management | Planning, FEMA, OEM, Red Cross | Ongoing | X | X | X | | | | |
| Multi-Hazard #4 | Institute a reverse 911 system in Marion County. | Emergency Management | Board of Commissioners, Sheriff's Office, Local jurisdictions, 911 | LT | | | | | | | X |
| Multi-Hazard #5 | Educate cities on process of declaring a disaster | Marion County Emergency Management | Sheriff's Department, FEMA, OEM, Marion County Incorporated cities | Ongoing | | X | | | | | |
| Multi-Hazard #6 | Identify and install emergency power backup for all critical county facilities. | Facilities Management | Emergency Management | LT | | | X | | X | | X |

| Action Item | Proposed Action Title | Coordinating Organization | Partner Organizations | Timeline | Alignment with Plan Goals | | | | | | |
|------------------|--|---------------------------|---|----------|---------------------------|-----------|----------------|----------------------------|-------------------------------|------------------------------|------------------|
| | | | | | Public Awareness | Education | Risk Reduction | Funding and Implementation | Partnerships and Coordination | Natural Resource Utilization | Plan Integration |
| Multi-Hazard #7 | Conduct an assessment of the short and long term needs for sheltering vulnerable populations during prolonged power outages. | Emergency Management | Marion County Public Health, Red Cross, Cities, NGO's, Oregon Public Health | Ongoing | | | | | X | | X |
| Multi-Hazard # 8 | Complete a risk analysis for the hazards addressed in this plan, when information is available, to estimate potential loss of life and damage to property. | Marion County GIS | Emergency Management, Planning Division, Road Department, DOGAMI, OEM, FEMA | LT | | | X | | | | |

