APPENDIX 1-A

PLAN UPDATE REVISIONS

Pursuant to Section 201.4(c)(1) of the Code of Federal Regulations (CFR) for Emergency Management and Assistance, this appendix describes how sections within the Oregon Natural Hazards Mitigation Plan (Oregon NHMP) were reviewed and revised as part of the 2012 plan update process.

The 2012 Oregon NHMP has migrated from a web-based plan to a printable version; as such the plan organization has changed in some significant ways. Primarily, only major revisions are documented herein. Major revisions 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 appendix, then it can be assumed that no significant revisions occurred.

Plan Organization

Organizationally, the 2012 Oregon NHMP is very different from the 2009 Oregon NHMP. The new organization mirrors the organization of 44 CFR §201.4 and §201.5. Table 1.A.1 below lists the 2012 plan section names and the corresponding 2009 section names.

Table 1.A.1 2009 and 2012 Plan Sections

2012 NHMP	2009 NHMP
Overview and Organization	Plan Index, Acknowledgements, Part 1: Introduction
Section 1. Planning Process	Part 1: Overview; Part 2: Section B; Part 4, Appendix 3; Part 4, Appendix 4
Section 2. Risk Assessment	Part 2: Section A; Part 2: Risk Assessment; Part 3: Hazard Chapters
Appendix 2-A: Regional Profiles and Natural Hazard Risk Assessments	Part 2. "Regional Profiles and Regional Natural Hazard Risk Assessment"
Appendix 2-B: State Vulnerability Assessment Tables	Part 2. Section A, "Estimating Potential Losses to State Facilities"
Section 3. Hazard Chapters	Part 3: Hazard Chapters
Section 4. Mitigation Strategies	Part 1: Overview; Part 2: Section B; Part 4: Appendix 1, 2, 7, 11, and 15
Appendix 4-A: Oregon NHMP Action Items Evaluation Table	Part 4. Appendix 11
Appendix 4-B: Action Item Descriptions	Part 3: Hazard Chapters
Appendix 4-C: Hazard Mitigation Successes	Part 4. Appendix 1
Appendix 4-D: Policies, Programs, Capabilities and Funding	Part 2, Section B; Part 4. Appendix 3, 5, 6, 15
Section 5. Coordination of Local Mitigation Planning	Part 1: Overview; Part 2, Section A; Part 2: Section B
Section 6. Plan Maintenance Process	Part 2: Section C; Part 3: Hazard Chapters; Part 4, Appendix 11
Section 7. Enhanced State Hazard Mitigation Planning Program	Part 2: Section B – "Pre-Disaster Mitigation Programs;" "Funding Used to Implement Mitigation Actions;" "Current and Potential Funding;" Part 2, Section C – "Summary: Assessment of Completed Mitigation Actions;" Part 3: Hazard Chapters; Part 4, Appendix 1, 6, 7, 9
Section 8. Appendices	Part 4: Appendix 4, 12, 13, 14

Source: OPDR

Note: Part 4. Appendices 8 and 10 were removed from the 2012 update of the Oregon NHMP.

Major Revisions

Major revisions to existing plan content are described below. Note that in order to maintain consistency, this appendix uses the 2012 plan section names when describing revisions.

Overview and Organization

This section is new within the Oregon NHMP, and it compiles the following content from the 2009 Oregon NHMP: Plan Index, Acknowledgements, and Part 1: Introduction

Section 1: Planning Process

This section provides content for the following CFR requirements:

- 44 CFR §201.4(b)
- 44 CFR §201.4(c)(1):

OPDR sent annual memos to the State IHMT to document and describe planning process updates, agency participation, public outreach, and updates to Oregon NHMP content.

Appendix 1-A: Plan Changes

This document is the changes memo for the 2012 Oregon NHMP.

Section 2: Risk Assessment

This section provides content for the following CFR requirements:

- 44 CFR §201.4(c)(2)(i-iii)

This section is a significant departure from past organization. Content has been condensed with extra information included within Appendix 2-A and Appendix 2-B.

At the time of the 2012 plan update, the State IHMT did not identify any additional hazards to be addressed in the plan.

The IHMT agreed to remove El Nino Southern Oscillation (ENSO) as an individual hazard. Instead, the impacts related to ENSO are considered within each description of related (to ENSO) hazards' characteristics, probabilities, and impacts in Section 2: Risk Assessment.

The IHMT decided to incorporate all hazards considerations within each description of hazards' characteristics, probabilities, and impacts in Section 2: Risk Assessment and Section 3, Hazard Chapters.

Potential losses by jurisdiction are provided within Appendix 2-B, Regional Profiles and Natural Hazard Assessments. Losses by hazard are provided within Section 2 and Appendix 2-B, State Vulnerability Tables.

APPENDIX 2-A: REGIONAL PROFILES AND REGIONAL HAZARD ASSESSMENTS.

The Regional Profiles were updated to reflect current best available data. Oregon Emergency Management is currently updating its Hazard Assessment information, to be completed by Fall 2012; as such, this updated information has not been included in the 2012 update of this plan. It is proposed to include the updates within the Natural Hazards Viewer (an online resource) which is referenced in the plan.

In addition, Appendix 2-A includes the State Facilities Tables which provide the 2005 Oregon Coast State Owned Building Inventory. This information has not been updated since the 2009 version of the Oregon NHMP. Section 2 and Appendix 2-B provides updates State Vulnerability data provided by hazard not region.

APPENDIX 2-B: STATE VULNERABILITY ASSESSMENT TABLES.

This appendix provides the full vulnerability assessment tables that are condensed within Section 2, Risk Assessment.

Section 3: Hazard Chapters

Section 3 expands on the content provided within Section 2, *Risk Assessment*, for the following CFR requirements:

- 44 CFR §201.4(c)(2)(i-ii)

The hazard chapters have all received updates from chapter leads; the earthquake and tsunami chapters have received significant updates and reorganization; other chapters received minor updates and/ or follow roughly the same organization.

The action item descriptions have been removed from the hazard chapters and included as appendices to Section 4, *Mitigation Strategies*, and Appendices 4-A and 4-B. The action items were re-organized around re-numbered as described in the content of Section 4, below.

Section 4: Mitigation Strategies

This section covers the following CFR requirements:

- 44 CFR §201.4(c)(3)(i-iv)

The following describes additional significant changes to this section and associated appendices.

The state IHMT added two new goals to the Oregon NHMP:

- GOAL 7: Motivate the public, private sector, and government agencies to mitigate against the effects of natural hazards through information and education.
- GOAL 8: Eliminate development within mapped hazardous areas where the risks to people and property cannot be mitigated.

APPENDIX 4-A: ACTION ITEM EVALUATION TABLE

Action items have been renumbered and organized into the following five categories.

- Legislative/ Policy,
- Education/ Outreach,
- Critical Infrastructure/ Essential Public Facilities,
- Land Use/ Development, and
- Maintenance/ Planning.

Each category has a few action items that have been identified as "critical" (priority action items) for progress to be made on them during the next three-year update cycle as described in detail within Section 4 of the Oregon NHMP. The action item evaluation table has been updated to include new and edited actions. Actions that were completed or removed from the Oregon NHMP are cited at the end of this document.

Appendix 4-B: Action Item Descriptions

This appendix serves to replace the action item descriptions that were previously described within individual hazard chapters.

Appendix 4-C: Hazard Mitigation Successes

Action items that have been completed are noted as successes within this appendix.

Appendix 4-D: Policies, Programs, Capabilities and Funding

This appendix includes several sections and appendices of the previous Oregon NHMP as described in Table 1.A.1 above. The content of the material has been updated but with no major revisions.

Section 4: Mitigation Strategies: Changes to Mitigation Actions

During the 2009 – 2012 Oregon NHMP update, action item 'leads' reviewed, and provided status updates for all of their actions in April, 2010, and again in July, 2011. OPDR coordinated communication between co-leads, where needed.

During the 2009 – 2012 Oregon NHMP update, the state IHMT agreed to modify the plan's action item organization system. Before 2012, the Oregon NHMP action items were organized by hazard. Full descriptions of actions items were provided in associated hazard chapters and a matrix of the action items was provided in Appendix 7. The new organization structure has the action items organized by the following categories:

- Legislative/ Policy
- Education/ Outreach
- Critical Infrastructure/ Essential Public Facilities
- Land Use/ Development
- Maintenance/ Planning

It was also agreed to prioritize the following categories (listed in order of priority):

1. Legislative/ Policy
2. Education/ Outreach, and
3. Critical Infrastructure/ Essential Public Facilities

Additionally, the State IHMT agreed to create additional action items that address obtaining greater political and legislative support and full representation at State IHMT meetings (as listed in the table below or in later area).

During the 2009 – 2012 Oregon NHMP update, the State IHMT agreed to modify the plan's action item numbering system. Before 2012, the Oregon NHMP actions had never been renumbered. When actions were completed, edited, or removed, for example, they still remained in the plan in order to avoid a renumbering process. Although this system worked for documentation purposes, the state IHMT agreed that the numbering system had become cumbersome and not necessarily useful. As such, the following steps were taken:

- All completed actions were moved to Appendix 4-C: Hazard Mitigation Successes.
- Actions that were no longer applicable to the current plan are documented within this appendix.

Each action's 'status' is better defined within the action item evaluation table in Appendix 4-A. Statuses now describe progress, obstacles, and/or expected timelines for completion

Table 1.A.2.The following actions are new within the 2012 Oregon NHMP:

Action	Action Item Statement	Lead Agency
Legislative/ Policy		
LP-1*	Review and re-establish State IHMT membership and member responsibilities	OEM
LP-2*	Complete a hazard mitigation policy legislative needs assessment	OEM
LP-6*	Integrate hazard data into planning and regulations	DLCD
LP-12	Address problem of structures requiring replacement (demo-rebuild) but ineligible under SRGP	OSSPAC
LP-15	Develop incentive/subsidy program for retrofit of one and two family residences	OSSPAC
LP-16	Develop incentives to increase the rate of replacement of privately-owned seismically deficient buildings	OSSPAC
Education/ Outreach		
EO-19	Encourage local jurisdictions to hold bi-yearly volcano preparedness forums	OEM
EO-25	Facilitate additional training on seismic design of structures and requirements of State Building Code relating to hazard mitigation.	BCD
EO-26	Draft model intergovernmental agreements to establish clear definitions of assistance and authority across jurisdictional lines or when state or federal resources are needed.	BCD
EO-37	Creation of New LiDAR-Based Landslide Inventory and Susceptibility Maps, especially near population centers.	DOGAMI
EO-41	Coordinate an Oregon-specific distant tsunami warning workshop	OEM
Critical Infrastructure/ Essential Public Facilities		
CI-7	Geo-survey the state's rights of way (ROW) to determine where seismic, landslide, and flood prone areas exist.	PUC
CI-21	Identify and implement tsunami mitigation projects to improve life safety by creating hardened and improved evacuation routes, preferably but not exclusively to natural, high ground.	OEM, DOGAMI
Land Use/ Development		
None	-	-

Source: OPDR

Table 1.A.2.The following actions are new within the 2012 Oregon NHMP (Continued):

Action	Action Item Statement	Lead Agency
Maintenance/ Planning		
MP-1*	State IHMT Agency Action Item Progress Reports	IHMT
MP-6	Establish a Silver Jackets Program	DLCD
MP-10	Improve statewide earthquake hazard datasets, develop more accurate and detailed risk datasets, make hazard and risk information widely and easily available	DOGAMI
MP-18	Develop Statewide resiliency plan consistent with intent of HR3	OSSPAC
MP-19	Acquire high-resolution lidar data , map hazards and incorporate risk assessments into mitigation plans	DOGAMI
MP-22	Reconvene the committee that oversees the Mount Hood Coordination Plan	OEM
MP-23	Perform multi-hazard risk analysis at all potentially active volcanoes in Oregon	DOGAMI
MP-24	Warning system	USGS
MP-25	Develop coordination plans for other volcanoes in Oregon	OEM
MP-26	Assess hazards associated with active crustal faults newly discovered by statewide lidar program	DOGAMI
MP-27	Evaluation of Landslide Risk	DOGAMI

Source: OPDR

Table 1.A.3.The following actions were completed between 2009 and 2012. All success stories can be viewed in Section 4, Appendix 4-C.

Action	Action Item Statement	Lead Agency
CE-ST-1	Update coastal hazard maps.	DOGAMI
F-ST-17	Expectation of counties prior to invoking the Emergency Conflagration Act	OSFM
LS-ST-7	Portland METRO Landslide Mapping and Research Project	DOGAMI
T-ST-2	Coordinate an Oregon specific tsunami warning workshop.	OEM
T-ST-7	Convene a tsunami task force.	OEM, DOGAMI
WS-LT-1	Update Oregon's snow load analysis to accurately reflect current weather conditions, updated climatology and related scientific data.	BCD

Source: OPDR

The following actions were removed from the Oregon NHMP:

Pre-2012 Action Item	**AH-ST-1**	**Periodically review and revise this Oregon Natural Hazards Mitigation Plan.**
With the assistance of the State IHMT, OEM reviews and revises this entire plan using a three-year cycle consistent with 44 CFR 201.3 (c)(2-3), 201.4 (d), and 201.5 (a), and (c) (1-2). During each year of the cycle, approximately one third of the plan will be reviewed, and - as needed - revised. Individual hazard chapters may also be revised after any Presidential emergency or major disaster declaration.		
Lead Agency(ies):	OEM	
Reason for Removal:	This action item is ongoing and considered an existing task not an action item. The content of this action is covered in Section 6, *Plan Maintenance Process*	

Pre-2012 Action Item	**AH-LT-6**	**Improve scientific and technical knowledge for hazard mitigation applications.**
Fundamental to effective hazard mitigation is knowledge about the nature, distribution, probability of occurrence, frequency and severity of historic hazard events, and other scientific and technical information. When linked to a community's demographics, economy, infrastructure, built environment, and other societal data, risk evaluations and vulnerability assessments can be performed. State IHMT agencies contribute to knowledge about natural hazards within the state. The following agencies are responsible for developing and maintaining hazard-specific information within the state's risk assessment hazard chapters (Section 2), and for advancing scientific and technical knowledge about natural hazards within the state of Oregon: OEM: All-Hazards and Tsunami; DOGAMI: Coastal Erosion, Earthquake, Landslide, and Volcano; ODOT: Dust Storm and Winter Storm; WRD: Drought; ODF: Fire; DLCD: Flood; and PUC: Windstorm. Since the scientific and technical knowledge for each hazard varies, State IHMT agencies have lead and support roles that also vary by hazard (see excel sheet -IHMT Agencies-Hazards contact OEM for listings). In addition to developing and maintaining hazard-specific information within the state's risk assessment hazard chapters, the IHMT will be responsible for reviewing available data, determining needed research and technical studies, coordinating hazard mapping and risk portrayal efforts at regional or statewide levels, and suggesting priorities for such work to optimize the investment of state funds in hazard mitigation data development. Additionally, the IHMT will work to improve scientific and technical knowledge to support future improvements to the state's risk assessment, as well as local risk assessments. State plans are required to present an overview and analysis of potential losses to identified vulnerable structures; likewise, potential losses must be based on estimates provided in local risk assessments as well as the State risk assessment. At the time of this update, local and State risk assessments were not detailed enough to provide for an overview and analysis of potential losses to specifically identified vulnerable structures. As such, IHMT agencies will work to improve scientific and technical knowledge to support improved state and local risk assessments.		
Lead Agency(ies):	All State IHMT	
Reason for Removal:	This action does not have a measurable outcome; as such, the action is being replaced by more specific actions related to the development of scientific and technical knowledge for hazard mitigation applications.	

Pre-2012 Action Item	**AH-ST-10**	**Maintain the plan as an Enhanced State Mitigation Plan**
This action is also related to short-term action #1. All plan revisions that occur within the three-year review and revision cycle will incorporate enhanced mitigation requirements in addition to the standard state NHMP requirements. Enhanced requirements include compliance with the following: Integration with other planning initiatives § 201.5(b)(1). Project implementation capability § 201.5(b)(2)(i) and (ii). Program management capability § 201.5(b)(2)(iii A-D). Assessment of mitigation actions § 201.5(b)(2)(iv). Effective use of available mitigation funding § 201.5(b)(3). Commitment to a comprehensive mitigation program § 201.5(b)(4)(i-vi).		
Lead Agency(ies):	OEM	
Reason for Removal:	This action item is ongoing and considered an existing task not an action item. The content of this action is covered in Section 6, *Plan Maintenance Process*	

Pre-2012 Action Item	**D-ST-1**	**Provide technical assistance to local governments on effective methods of water use curtailment.**
Educate local government officials about ways of reducing water use during drought emergencies, including voluntary and enforced methods such as odd-even watering, no outside use of water, mandatory reductions of certain uses, etc.		
Lead Agency(ies):	WRD	
Reason for Removal:	Currently, Oregon's Water Resources Department (WRD) considers this to be an ongoing responsibility that does not have measurable outcomes.	

Pre-2012 Action Item	**D-LT-1**	**Provide training on water conservation measures to farmers and ranchers, including drought management practices for crops and livestock.**
In cooperation with OSU Extension Service and agricultural organizations that are prominent and respected within the farming and ranching community, build on existing outreach methods with the goal of providing water conservation/drought management training to farmers and ranchers.		
Lead Agency(ies):	ODA	
Reason for Removal:	ODA proposed removal because they do not take a primary role in the action's implementation, and they do not have any regulatory authority related to this action.	

Pre-2012 Action Item	**D-LT-2**	**Provide technical assistance and low-interest loans to farmers and ranchers so that they can develop livestock watering systems.**
Droughts can lead to problems providing livestock with drinking water, e.g., situations where a well has gone dry in a pasture. Livestock watering systems provide additional options for farmers and ranchers to provide drinking water, and can sometimes also improve riparian habitat. Systems can be divided into three types: controlled access (to a river or stream); gravity flow; and pressure systems, run by pumps, which are sometimes powered by wind or solar electricity. The best livestock watering system for a given situation depends on several factors, including water needs, water source type and location, the site, and electric power availability.		
Lead Agency(ies):	ODA	
Reason for Removal:	ODA proposed removal because they do not provide technical assistance and/or loans, and they do not have the resources to do this in the near future. Soil and water conservation districts and the National Resource Conservation Service are more appropriate leads.	

Pre-2012 Action Item	**DS-ST-1**	**Learn from research underway at Washington State University about the latest methods of wind erosion prediction, and apply learning to reduce blowing dust hazards**
Scientists continue to struggle with an imperfect knowledge of the chemistry and physics involved in the generation, detachment, and transport of dust particles. Washington State University (WSU) is developing a new model for wind erosion prediction in an effort to advance knowledge of how dust storms are generated. Among other things, research is aimed at developing more reliable instrumentation. By better understanding how dust storms are generated, Oregon should be able to reduce the frequency of dust storms and volume of dust available, as well as provide warning agencies with better information and more lead-time to issue advisories and warnings. Additional information on this WSU research may be found at: http://cahenews.wsu.edu/RELEASES/2003/03002.htm. Share findings with local, state, and federal agencies involved in dust storm warnings such as the National Weather Service, ODOT, OSP, and public safety answering points. Also share findings with agencies having natural resource interests such as soil and water conservation districts, and Tribes.		
Lead Agency(ies):	ODA	
Reason for Removal:	Action is no longer applicable and/or relevant	

Pre-2012 Action Item	**DS-LT-1**	**Determine the feasibility of spraying natural materials on fields to reduce blowing dust; share findings with agricultural producers and natural resource agencies in dust-prone areas of the state.**
Washington State University is studying the feasibility of spraying fields with a starch-based material made from potato byproducts to combat blowing dust. Related research involves controlling wind erosion by spraying fields with a compound consisting of lignin, carbohydrates, and ash minerals reclaimed from a straw pulping process. If one or more of these methods proves feasible and cost effective, it would reduce loss of soil, deposition of silt in unwanted places, and the frequency and magnitude of dust storms. Promising findings should be shared with both farmers and natural resource agencies in wind erosion prone areas. These and other ideas were reported at the 10th annual meeting of the Columbia Plateau Wind Erosion/Air Quality Project. This program is administered by Washington State University and the USDA's Agricultural Research Service. Scientists at the Washington State Department of Ecology, the Environmental Protection Agency, Natural Resources Conservation Service, and several local, state and regional grain grower groups play key advisory roles. The project covers low precipitation areas where blowing dust is a common problem, approximately three million acres of cropland in Washington and 500,000 acres in Oregon, mostly in areas that receive less than 12 inches of moisture each year. Additional information is available at: http://cahenews.wsu.edu/RELEASES/2003/03002.htm		
Lead Agency(ies):	ODA	
Reason for Removal:	ODA proposed removal of this action because they do not have the regulatory authority to do this. The action is also outdated and no longer relevant.	

Pre-2012 Action Item	**DS-LT-3**	**Promote development of erosion control management plans and incentives in areas where blowing dust is known to create a hazard for the traveling public – Umatilla and Morrow Counties.**
In a few areas where blowing dust has been shown to contribute to traffic accidents, Oregon Department of Agriculture should assist local soil and water conservation districts to develop erosion control management plans and incentives. Other important stakeholders in the development of such plans and incentives would include the Oregon Soil and Water Conservation Commission, the Oregon Wheat Growers League, and other agricultural associations.		
Lead Agency(ies):	ODA	
Reason for Removal:	Action is redundant to local activities. Since 1985, to maintain eligibility for USDA Farm Program benefits, landowners have been required to meet minimum standards for control of erosion, both from water and wind. Participating farmers have developed and are responsible for implementing conservation plans for all farmland designated as highly erodible. Plans address practices such as residue management, tillage methods, and irrigation management.	

Pre-2012 Action Item	**E-ST-1**	**Further develop and exercise plans for facility safety inspections following earthquakes**
Integrate the Building Codes Division's Emergency Response Plan with the State EOP Emergency Support Function (ESF) #3. The focus of the ERP is to effectively activate and manage the post-earthquake safety inspection program. Support the recruitment and training of registered inspectors and inspection teams. Create communication networks to effectively alert inspectors when an emergency occurs. Work with local jurisdictions to encourage the development of local response plans that include identification and evaluation of essential and hazardous facilities and special occupancy structures as defined in ORS 455. Exercise these plans.		
Lead Agency(ies):	BCD, ODOT, OEM	
Reason for Removal:	Combined with E-ST-2, current Action Item CI-14	

Pre-2012 Action Item	**E-ST-2**	**Continue to compile and maintain a list of regional ATC-20 post earthquake inspection training and certification of qualified persons. Solicit those with ATC-45 flood & wind inspection training. Develop plans for rapid mobilization of inspectors for post disaster facility inspection.**
Maintain a roster of qualified post-earthquake, flood, and wind inspectors. Create rapid communication networks to effectively alert necessary inspectors when disasters occur. Work with OEM, local government building officials, and emergency planners to establish an effective process for assigning inspection teams to needed areas and educating local governments regarding the circumstances and process for initiating BCD and state involvement.		
Lead Agency(ies):	BCD	
Reason for Removal:	Combined with E-ST-1, current Action Item CI-14	

Pre-2012 Action Item	**E-ST-7**	**Use current version of HAZUS to support hazard mitigation activities**
HAZUS can provide local and state governments and businesses with estimates of disaster losses. The estimates can be used to prepare benefit/cost analyses. This may provide an incentive to mitigate. DOGAMI has already utilized HAZUS to estimate damages in the state from scenario earthquakes (Special Paper 29) and has compared damages from past earthquakes with HAZUS results, specifically the Klamath Falls earthquake in 1993. HAZUS damage estimates have been incorporated into several county hazard mitigation plans.		
Lead Agency(ies):	DOGAMI	
Reason for Removal:	Replaced with MP-10	

Pre-2012 Action Item	**E-LT-6**	**Update the HAZUS 99 database**
The HAZUS99 database in Oregon contains mainly default data. However, the database can be modified to incorporate local information, such as geology, building inventories, lifelines, and hazardous material sites. Revised and new data will improve the database and therefore produce more accurate loss estimates.		
Lead Agency(ies):	DOGAMI, OEM	
Reason for Removal:	Replaced with MP-10	

Pre-2012 Action Item	**E-LT-11**	**Develop a model ordinance for the retrofit of existing, hazardous building elements, and encourage adoption by local governments; include incentives for adoption.**
A model ordinance, specifically for Oregon, should be developed and include suggested standards and provisions that encourage opportunities to retrofit existing, hazardous building elements, including parapets. By having an adopted ordinance, communities will also take steps toward pre-identifying potential hazard mitigation project opportunities should funding become available from government or other sources. A State IHMT subcommittee will be created to accomplish this action. See also short-term action #10 on pages E-14 and E-15.		
Lead Agency(ies):	BCD	
Reason for Removal:	BCD removed this action, and combined it with EQ-ST-10: 'Provide information to local governments regarding adoption of programs and model ordinances for mitigation of existing, hazardous, unsecured buildings elements, such as parapets.' New Action Item EO-10.	

Pre-2012 Action Item	**ENSO-ST-1**	**Utilize state resources to provide seasonal assessments of El Niño and La Niña conditions.**
Several state agencies have meteorological and forecasting resources capable of providing ENSO analyses prior to each season. These seasonal assessments might be used to inform decisions in both the public and private sectors regarding addressing conditions likely due to either an El Niño or La Niña forecast. For example, are drought conditions or increased coastal erosion more likely? State agencies have made minimal progress in implementing this action since it was programmed in 2004. One challenge has been that most state meteorological forecasting resources are dedicated to fairly narrow audiences and purposes, in part due to funding.		
Lead Agency(ies):	No lead	
Reason for Removal:	Action does not have a functional lead agency nor are any resources readily available proactively in today's economic climate.	

Pre-2012 Action Item	**ENSO-ST-2**	**Track seasonal threats for floods, water shortages, landslides, debris flows, forest fires, and other natural hazards associated with extreme weather events**
El Niño and La Niña forecasts can point to strong or weak influences on these natural hazard conditions. State agencies interpret, fine-tune, and track likely increased threats. See short-term action #3 for more information on how the state intends to make this information widely available.		
Lead Agency(ies):	OEM, ODF	
Reason for Removal:	No measurable outcome	

Pre-2012 Action Item	**ENSO-ST-3**	**Provide web-based information describing Oregon's assessment of current El Niño and La Niña threats.**
Assessments of periodic threats of natural hazards caused by El Niño and La Niña conditions (e.g., likely drought, flooding, greater than normal coastal erosion, etc.) should be posted to appropriate state agency websites linked to information about steps that can be taken to mitigate and prepare for these hazards. This Oregon approach would expand upon regional or generalized national impact scenarios that may or may not address the state's view or interests. State agencies should also publicize the fact that this information is available on their websites. This action, programmed in 2004, has generally not occurred due to lack of state resources.		
Lead Agency(ies):	OCCRI	
Reason for Removal:	Action does not have a functional lead agency. NOAA provides useful information already through products issued by the Climate Prediction Center.	

Pre-2012 Action Item	**ENSO-LT-1**	**Refine information on El Niño and La Niña impacts in the different climate regimes of the state; impacts to be addressed include those on natural resources, agriculture, environmental quality, power generation, lifestyles, and economic conditions.**
Different regions of Oregon experience El Niño and La Niña in different ways; general forecasts for these ENSO weather phenomena need to be refined for Oregon's varied climate regimes. If this action is to be implemented, a lead agency for this action needs to be identified: the Oregon Climate Change Research Institute (OCCRI) may be most appropriate.		
Lead Agency(ies):	No lead	
Reason for Removal:	Action does not have a functional lead agency.	

Pre-2012 Action Item	**ENSO-LT-2**	**Identify additional funding and logistical resources that are needed, or how resources should be shifted on a statewide basis, when severe impacts are expected from El Niño and La Niña events.**
Work needs to be done to identify resource or logistical reallocations that would allow the State of Oregon to better prepare for and mitigate against the effects of El Niño and La Niña events. For example, a 2002 study suggested that floodplain managers and emergency managers are likely to use climate information in their mitigation efforts if four conditions are met: the forecast is relevant to the circumstances and needs of end users; practical mitigation measures can be implemented once a forecast is seen to have some predictive value; the economic and political costs of a "wrong" decision are limited; and there exists among the many agencies and groups involved… a commitment to act. Since this action was drafted in 2004, ODF has done work on analyzing resource needs based on wildfire severity. However, that analysis is based not on ENSO, but rather on fire and fire index histories. ODF does not plan to pursue funding or FTE to finish this work based on ENSO.		
Lead Agency(ies):	OEM	
Reason for Removal:	Action will not be proactively supported in a strategic sense or with any advance funding.	

Pre-2012 Action Item	**ENSO-LT-3**	**Monitor changes in the threat for large wildfires due to changes in climatic weather conditions and provide fire intelligence analysis tools that forecast wildfire severity.**
El Niño winters are usually warmer and drier than average in Oregon. This often leads to an increased threat for large wildfires the following summer and autumn. ODF's analysis of large fire potential is nearly complete: 12 of 14 identified Fire Danger Rating Areas have completed their analysis. These analyses will be reevaluated annually based on each year's weather and fire occurrence data. State firefighting agencies will continue to monitor correlations between seasonal weather conditions and wildfire occurrences and severity to refine planning tools for fire seasons and to aid in the pre-positioning of firefighting resources to reduce the vulnerability posed by large wildfires to natural resources and structures.		
Lead Agency(ies):	ODF	
Reason for Removal:	This is an ongoing responsibility of ODF, with no specific and/or measurable outcome. It has been incorporated as a note within the Fire Chapter.	

Pre-2012 Action Item	**F-ST-6**	**Develop a matrix of current SB 360, National Fire Plan, and other wildfire interface mitigation projects to improve collaboration and reduce duplicative efforts.**
The need for this action item has been significantly diminished by the growth and evolution of the Community Wildfire Protection Plan (CWPP) process. A major component of each CWPP development includes the identification and prioritization of mitigation projects.		
Lead Agency(ies):	ODF	
Reason for Removal:	The need for this action item has been significantly diminished by the growth and evolution of the Community Wildfire Protection Plan (CWPP) process. A major component of each CWPP development includes the identification and prioritization of mitigation projects. Examples of local products already exist in places such as Dechutes County.	

Pre-2012 Action Item	**FL-ST-11**	**Implementation of the Conservation Reserve Enhancement Program in Oregon**
The Conservation Reserve Enhancement Program is a state/federal partnership to improve water quality and habitat values in streams, riparian areas, and wetlands. Program goals are to reduce water temperature to natural levels, reduce sediment and nutrient pollution from agricultural lands near streams, stabilize stream banks, restore natural hydraulic and stream channel conditions, and provide habitat for federally threatened or endangered salmon and trout. This program works by removing certain lands from agricultural production; landowners obtain financial benefits to improve riparian habitats. Landowners enter into contracts for 10 to 15 years. There are bonuses for enrolling at least ½ mile of stream in the program. Since this program helps to reduce sediment and protect stream banks, it helps maintain the capacity of existing river and stream channels. Work with the Natural Resources Conservation Service, local SWCDs, and US Farm Services Agency to implement this program in Oregon.		
Lead Agency(ies):	OWEB	
Reason for Removal:	This is an ongoing program that is administered by OWEB, with no specific and/or measurable outcome.	

Pre-2012 Action Item	**F-LT-3**	**Reduce fuels and develop community fuel breaks in high risk, high priority wildland interface areas.**
The identification of projects called for in this action item has been replaced by the identification of high priority projects in Community Wildfire Protection Plans.		
Lead Agency(ies):	ODF	
Reason for Removal:	The identification of projects called for in this action item has been replaced by the identification of high priority projects in Community Wildfire Protection Plans.	

Pre-2012 Action Item	**FL-ST-12**	**Implementation of OWEB's Small Grant Program**
This grant program offers the opportunity to obtain funding (up to 75%) for projects of $10,000 or less that enhance or restore fish habitat. Fundable projects include improving in-stream habitat, creating off-channel flood storage, restoring wetlands by removing fill, and other such projects. By improving the overall health of our watersheds, damage from future flooding will be reduced.		
Lead Agency(ies):	OWEB	
Reason for Removal:	This is an ongoing program that is administered by OWEB, with no specific and/or measurable outcome.	

Pre-2012 Action Item	**FL-ST-13**	**Implementation of DEQ's "319" Grant Program**
This grant program offers potential funding for flood-reduction, wetland enhancement, and nonpoint source water quality enhancement projects in Oregon's watersheds. Fundable projects include off-channel flood storage, erosion control, wetland restoration, and protection of existing wetlands.		
Lead Agency(ies):	DEQ	
Reason for Removal:	This is an ongoing program that is administered by DEQ, with no specific and/or measurable outcome.	

Pre-2012 Action Item	**FL-LT-5**	**Improve watershed management practices**
Many flood related problems can be minimized by improving watershed management practices. These include implementing scientifically sound forest management practices; state of the art road location, construction, maintenance, and repair practices; urban riparian vegetation management methods; reducing compaction or paving of ground surfaces due to urbanization; balancing the removal of woody debris from rivers with the needs of habitat; creating water storage areas, enhancing environmental and habitat conditions; and implementing scientifically sound agricultural management practices. Additional emphasis is needed to better protect floodplains and wetlands as storage areas. Preserving these natural features for flood storage is a proactive action to protect the public from flood losses. Watershed assessments developed by local watershed councils provide important information about floodplains. However, these assessments typically do not have a flood mitigation component and may not get utilized by local floodplain managers. Additional work is needed to ensure that the potential effects of upstream floodplain development on downstream property owners and communities are better assessed and considered in decision-making processes. For example, can we better assess and plan for the cumulative impacts in lower reaches of watersheds brought on by increasing impervious surfaces due to urbanization upstream? An "urban" chapter has been developed for the Oregon Watershed Assessment Manual to help address how development can impact the functioning of the floodplain, particularly downstream of the development. Also available for use are a model development code and guidebooks for addressing non-point pollution, which include information regarding the impacts of impervious surfaces in urban or urbanizing areas. These are good steps forward, but more work is needed in both information development and the application of this information in decision-making processes.		
Lead Agency(ies):	OWEB	
Reason for Removal:	Action lacks specific, measurable outcomes. Currently, OWEB (action lead) is not engaged in the state NHMP planning process.	

Pre-2012 Action Item	**LS-ST-1**	**Determination of further review areas, especially near population centers**
DOGAMI will make the final determination of further review areas for rapidly moving landslides as required by Oregon SB 12 (1999 Session). Especially near population centers, mapping will be refined. DOGAMI will fill a limited duration position for the project, and will conduct additional ground-based mapping as appropriate. Specific methods and priority locations are still to be determined. SB 12 (1999), now ORS 195.260 (2003), was amended to remove certain land use restrictions implemented on lands identified to be within further review areas for rapidly moving landslides. In response to issues raised by local governments, DOGAMI revised project objectives for completion of further review area maps. See IMS-22 on page LS-5. DOGAMI will work with cities and counties to identify priority areas for determination of further review areas. See also short-term action # 7.		
Lead Agency(ies):	DOGAMI	
Reason for Removal:	Action was resolved with the publication of DOGAMI publication IMS-22 in 2002. This map showed areas either in or out of rapidly moving landslide hazard based on the data and methodology used in that study. DOGAMI has no plan and is under no legislative or other directive to revisit "further review areas" in this regard.	

Pre-2012 Action Item	**LS-LT-1**	**Mapping other landslide hazards, especially within UGBs**
Develop a comprehensive landslide program to map the landslide hazards in Oregon to better understand location and magnitude of the risk. The focus should be on urban areas and within urban growth boundaries: locations where dwellings are likely. Current technology allows identification of large pre-existing landslides, geologic units with weak materials, and other potential deep-seated landslide prone locations. Focus will be on high hazard, high risk Western Oregon, but over time will encompass entire state.		
Lead Agency(ies):	DOGAMI	
Reason for Removal:	Action has been achieved in that DOGAMI now has a well established and comprehensive landslide program. DOGAMI has published lidar-based landslide inventory mapping protocol (Special Paper 42, 2009) and is rolling out maps for specific areas as they are completed (ex: IMS-32 Landslide Inventory maps of the Lake Oswego quadrangle…, 2011). These detailed (1:8,000 scale) maps and GIS databases map and attribute all identified landslides including debris flow fans that are the geologic remnant of rapidly moving landslides. DOGAMI has mapped 4,080 square miles of western Oregon using lidar data, at varying scales, and continues this work as funding sources are identified. In addition, DOGAMI continues to advance its landslide susceptibility models and maps for shallow and deep seated as well as for rapidly moving landslides.	

Pre-2012 Action Item	**T-ST-3**	**Develop training and information packets and articles for local building officials informing them of their responsibilities and authority under ORS 455.446 and 455.447 and the State Building Code.**
Statutes and the State Building Code limit construction of new essential facilities and special occupancy structures in the mapped tsunami inundation zone. Definitions of essential and special occupancy structures are in the Oregon State Structural Specialty Code. Training has not been provided to local building officials since the original adoption of SB 379 (1995 Oregon Legislative Session), codified as ORS 455.446 - .447. As personnel change and time passes, additional training and information for officials will be provided.		
Lead Agency(ies):	BCD	
Reason for Removal:	Local governments are already fulfilling these responsibilities.	

Pre-2012 Action Item	**T-LT-1**	**Develop a tsunami warning system for Oregon**
A tsunami warning system must be coordinated, complete, and robust. To effectively notify the population of a destructive tsunami it is important to have a warning system that is consistent from location to location along the Oregon Coast and notifies all populations no matter where they are or what activity they are engaged in. The warning systems are effective mainly for distant tsunamis. The strong ground shaking from a local tsunami-generating earthquake is the natural warning for a local tsunami. Public education efforts train residents to take the appropriate evacuation action. However, systems should be robust enough to withstand an earthquake and therefore be activated to compliment the strong ground shaking that should initiate evacuation to high ground and/or inland. Occasionally an earthquake is felt on the coast that does not produce a tsunami. These earthquakes should be taken into consideration when planning a warning system. Unnecessary evacuation will result not only in lost revenue but may lead to injury and may result in people ignoring real warnings. Development of any system should be in collaboration with local coastal jurisdictions and, if possible, other states.		
Lead Agency(ies):	OEM	
Reason for Removal:	Removed because it is not feasible. There is no statewide planning for state-coordinated warning system (aka infrastructure). Local governments have been achieving some success on an ad hoc, independent way without much state support, in reusing surplus warning sirens such as those from the now defunct CSEPP program.	

Pre-2012 Action Item	**T-LT-6**	**Strongly encourage the adoption of State Building Code standards (or other incentives) for retrofitting, upgrading, protecting, essential facilities, hazardous facilities, and special occupancy structures in coastal communities that are vulnerable to tsunami (and earthquake) hazards.**
A large tsunami (and associated earthquake) would likely destroy many buildings in coastal communities that are located in the tsunami inundation zone. The damage would be from the combined effects of the forces from the tsunami waves, currents and debris, as well as the earthquake hazards. The State of Hawaii has adopted construction standards for buildings in tsunami zones. The National Tsunami Hazard Mitigation Program recently completed the document 'Designing for Tsunamis' that outlines some of these issues. These documents could be evaluated and used as a starting point in developing standards.		
Lead Agency(ies):	BCD	
Reason for Removal:	With ORS 455.447 and coastal community attention to coastal hazard concerns in the planning process, BCD has pursued this objective to the full scope of its authority. Further action is outside the division's authority.	

Pre-2012 Action Item	**W-ST-2**	**Promote effective vegetation management practices to improve safety and reliability**
Overhead utility lines, especially those providing electricity, are particularly vulnerable to severe storms. It is recommended that effective pruning and vegetation management procedures be implemented so that utility providers and local communities improve public safety, and reduce storm losses and service interruptions. The following activities can contribute to this action: 1: Proper vegetation management is being promoted by several state agencies, including the Oregon Department of Forestry and the Oregon Public Utility Commission, along with other entities including the Pacific Northwest Chapter International Society of Arboriculture and investor owned utilities. An annual vegetation management conference has been held for the past eight years, focusing on this objective. 2: All utilities that use poles and overhead lines should use conventional media and the Internet to provide and share information with government agencies and the public on vegetation management policies and actions that can reduce windstorm damage. 3: OEM and ONHW will conduct outreach to local governments that are doing hazard mitigation planning to include providing information and encouraging appropriate actions in local plans. 4: Public agencies and utilities should utilize "windows of opportunity," the times immediately after windstorms, to do public service announcements, utility bill inserts, and other communication mechanisms that can capitalize on increased attention being paid to trees and utilities. In those cases for which traditional pruning and vegetation management are not practical (often-times areas with repetitive losses), undergrounding of electrical service may provide a long-term, cost-effective solution in reducing losses and maintaining electrical service to essential users.		
Lead Agency(ies):	PUC	
Reason for Removal:	There is no need (to keep the action item) because our statutes and rules already address responsibility. It is ongoing and OPUC enforces the statute and rues statewide. OPUC's OAR 860-024 rules and FERC/NERC Rules for Transmission lines (FAC-003-2**). Also, along with the OAR 860-024 rules add the Immunity (Energy Utilities) on liability statutes.	

Pre-2012 Action Item	**W-ST-5**	**Vegetation should be managed in areas within/adjacent to rights-of-way to reduce the risk of tree failure and property damage**
State agencies, insurance providers, utility providers, and other interested parties should identify the best management practices that entities can adopt in order to reduce the risk of tree failure, thereby reducing windstorm damage. Interagency cooperation at the state level among all agencies with land management responsibilities (ODOT, ODF, DSL, OPRD) should be increased to ensure a common approach to tree risk management. These agencies could also serve as role models in creating initiatives that not only increase public safety, but improve tree health as well. These should include actions that: Help cities minimize their risk to hazard trees through tree risk assessment, hazard tree evaluation, planning, inventory, and management plans; Identify the risk and liability faced by utilities and local governments; and Reduce the risk from hazard trees by participating in proactive efforts such as the International Tree Failure Database (ITFD). The ITFD is an effort to catalogue tree failures and learn lessons from failures that can be applied to the hazard tree evaluation process.		
Lead Agency(ies):	ODF	
Reason for Removal:	PUC does not have right-of-way jurisdiction in Oregon.	

Pre-2012 Action Item	**WS-ST-7**	**Educate farmers about ways to protect livestock from the effects of winter storms.**
Snow fences should be installed in rural areas to reduce drifting snow on roads and paths, which could block access to barns, feed, and water. Horses and livestock should have a shelter where they can be protected from wind, snow, ice, and rain. Grazing animals should have access to a protected supply of food and non-frozen water.		
Lead Agency(ies):	ODA	
Reason for Removal:	ODA proposed removal of this action because they do not have the regulatory authority to do this.	

Section 5: Coordination of Local Mitigation Planning

This section covers the following CFR requirements:

- 44 CFR §201.4(c)(4)(i-ii)

No major content changes occurred to this section; organizational changes are noted in Table 1.A.1.

Section 6: Plan Maintenance Process

This section covers the following CFR requirements:

- 44 CFR §201.4(c)(5)(ii & iii)

No major content changes occurred to this section; organizational changes are noted in Table 1.A.1.

Section 7: Enhanced State Hazard Mitigation Planning Program

This section covers the following CFR requirements:

- *44 CFR §201.5(a)*
- *44 CFR §201.5(b)(1-4)*

This section is new within the Oregon NHMP, and it compiles the following content from the 2009 Oregon NHMP: Part 2: Section B – "Pre-Disaster Mitigation Programs;" "Funding Used to Implement Mitigation Actions;" "Current and Potential Funding;" Part 2, Section C – "Summary: Assessment of Completed Mitigation Actions;" Part 3: Hazard Chapters; and Part 4, Appendix 1, 6, 7, 9

Section 8: Appendices

The appendices have been incorporated into others sections of the Oregon NHMP as described in Table 1.A.1; with the exception of Appendix 8 and Appendix 10 which were removed from the plan since they were no longer deemed relevant. Content of the appendices has been updated; however, no significant changes are noted.