



*2013 Washington State
Enhanced State Hazard Mitigation Plan*

Element A

ELEMENT A: PLANNING PROCESS		Page
Requirement §201.4(c)(1)	[The plan must include] Description of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.	2
§201.4(c)(5)(i)	[The plan maintenance process shall include] An established method and schedule for monitoring, evaluating, and updating the plan.	17

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning, therefore, is to maintain a process that leads to hazard mitigation actions. Mitigation plans identify the natural hazards that impact states as well as communities, identify actions and activities to reduce losses from those hazards, and establish a coordinated process to implement the plan (44 CFR §201.1(b)).

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards (44 CFR §201.2). Hazard mitigation activities may be implemented prior to, during, or after an event. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs.

The **Washington State Hazard Mitigation Plan’s Mission** is to reduce the adverse impacts and losses caused by natural hazard events.



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Documentation of the Planning Process

Requirement 44 CFR §201.4(c)(1): *Plan Content*. To be effective the plan must include a description of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.

Planning Process to Update the State Hazard Mitigation Plan

The Hazard Mitigation Strategist from the Mitigation and Recovery Section of the Washington Military Department's Emergency Management Division (EMD) led the effort to update the Enhanced State Hazard Mitigation Plan (ESHMP) for 2013. The strategist convened meetings of the State Hazard Mitigation Advisory Team (SHMAT), collected best available science, wrote drafts of revised sections, and facilitated their review by subject matter experts. Further, the strategist assisted state agencies with review and revision of their mitigation actions; reviewed local plans for information to include in the state plan; and facilitated adoption of the Enhanced State Hazard Mitigation Plan by the EMD Director. Lastly, the previous plans' formats were updated to the 2013 FEMA issued State Tool Guide's format and combined into a cohesive document.

Below is a summary of the results of the update process for the State's hazard mitigation plan.

Technological Hazard Profiles – The SHMAT and the EMD Hazard Mitigation Strategist added technological hazard profiles to the ESHMP. Specifically, profiles for Animal / Crop / Plant Disease and Infestation Outbreak, Pipelines, Terrorism, and Urban Fire were developed. The Hazardous Materials and Dam Safety profiles from the previous 2010 plan were updated. The Public Health profile was expanded to include more human communicable disease outbreak, epidemic, and pandemic information while removing animal and plant epidemics. Climate Change was incorporated into each hazard profile since its affect varies with the hazard. An outcome of the 2012 THIRA development was the emergence of cybersecurity as a hazard with its implicit risks and vulnerabilities. Consequently, a cybersecurity profile will be developed for the 2016 update cycle.

HIVA – The EMD Hazard Mitigation Strategist incorporated the Washington State Hazard Identification and Vulnerability Assessment (HIVA) 2009 report into the Enhanced State Hazard Mitigation Plan. By combining the hazard identification and risk assessments from the 2010 ESHMP and the 2009 HIVA saved effort and created efficiencies of these duplicative plans. Additionally, the State Hazard



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Mitigation Plan update cycle is every three years versus the HIVA eight-year cycle so the data and results will be more current.

The HIVA meets the requirements of the Revised Code of Washington (RCW) 38.52.030(3) by providing the hazard identification and analysis to support the Washington State *Comprehensive Emergency Management Plan* (CEMP). The HIVA is an assessment of hazards and risks to the people, economy, environment, and property of Washington State. The HIVA complies with the Emergency Management Accreditation Program (EMAP) Standard 4.3.1 by identifying and analyzing the technological and natural hazards that are present and pose a threat to the people, economy, environment, and property of Washington. HIVA analysts conducted extensive research into the history and vulnerability for each hazard and included a risk assessment using subject matter experts, publications, and the best-known science and technology on the subject. The same methodology was used for the State Hazard Mitigation Plan's Risk Assessment. The reviewers and contributors for both documents were nearly identical.

THIRA –Incorporation of the DHS/FEMA Threat and Hazard Identification and Risk Assessments (THIRAs) is difficult since its development was running a few months behind the State Hazard Mitigation Plan update process. Consequently, EMD and its Hazard Mitigation Strategist incorporated the HIVA instead with the intent to incorporate the THIRA during the 2016 update process. Nonetheless, THIRAs are intended to be tools that allow organizations at all levels of government to identify, assess, and prioritize their natural and man-made risks. These assessments are meant to facilitate the identification of capability and resource gaps, and allow organizations to track their year-to-year progress to address those gaps. THIRAs are intended to leverage existing hazard mitigation processes, but be conducted in a reasonably standard manner so that results may be incorporated into Federal-level assessments.

Per the FEMA Strategic Plan, Fiscal Years 2011-2014, FEMA P-806, *Initiative 3, Build Unity of Effort and Common Strategic Understanding Among the Emergency Management Team* key outcomes to achieve include:

- Conduct Regional Threat and Hazard Identification and Risk Assessments (THIRAs) in each FEMA Region, in coordination with members of the emergency management team. These assessments should: (a) reflect the vital interests and priorities of each partner; and (b) contain tailored regional planning assumptions based on the threats and risks present in each region.
- Develop joint action plans to address regional planning assumptions for response and recovery in each FEMA Region.
- Facilitate the adoption and enforcement, where feasible and appropriate, of building codes and other protection and mitigation activities at the State level that enhance resilience to the risks identified in the Regional THIRAs, address energy sustainability, and ensure universal design of buildings, transportation vehicles, etc. to meet the access and functional needs of all individuals.



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Maps, Charts, and Visual Effects - The EMD Hazard Mitigation Strategist and subject matter experts updated maps, charts, and graphs with current information. Each altered item was dated to enable ease in reference to make certain the most current information was utilized.

Narrative – The EMD Hazard Mitigation Strategist condensed the narrative into more succinct chunks. The intent was to tell the story with sufficient information that the data would not bog down the storytelling. Sources of additional information were cited in the narrative while longer supplemental features like federal funding sources tables or open mitigation strategy action items were moved into tables as appendices.

Assurances – The EMD Hazard Mitigation Strategist reviewed and revised this section of the plan. Further review by other parties was not necessary, as the purpose of this section is to provide a restatement of required assurances outlined in 44 CFR 201.4.c.7. This component was integrated into Element D following the new FEMA format.

Planning Process – The EMD Hazard Mitigation Strategist reviewed and revised this section of the plan to reflect the process used to review the 2010 plan and make revisions for the 2013 plan. Further review of this section by other parties was not necessary, as the primary purpose of this section is to document the plan review and revision process. This component was integrated into Element A following the new FEMA format.

Coordination of Local Planning – The EMD Hazard Mitigation Strategist updated this section of the plan and performed an analysis of local plans submitted from January 2011 through December 2012. Consequently, an additional 28 plans were reviewed, encompassing well over 100 jurisdictions (tribes, counties, cities/towns, and special purpose districts). These included eight county based multiple jurisdictional plans and seven tribal plans plus some city and health care provider plans. These new and updated plans were examined for local plan mitigation goals, determinations of vulnerability to natural hazards, and how communities made those determinations. The analysis showed that most mitigation goals in many of the local plans were aligned with the goals in the state plan. Consequently, SHMAT members concluded that major change was not required to the state plan's goals and objectives. The hazards of greatest concern to local communities - earthquake, fire, flood, and severe storm - were also among those of greatest concern to the state as determined by the SHMAT. This component was integrated into Element A following the new FEMA format.

Plan Maintenance – The EMD Hazard Mitigation Strategist reviewed and revised this section of the plan. Additionally, the SHMAT recommendations for the 2013-2016 plan maintenance process were included. This component was integrated into Element A following the new FEMA format.



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Risk Assessment – The EMD Hazard Mitigation Strategist provided support to the contractor that developed the Risk Assessment and Loss Avoidance Studies for Washington State. Besides the state profile, the contractor developed risk assessments for the four hazards of greatest concern to Washington State: Earthquakes, Floods, Severe Storm, and Wildfires. The strategist incorporated the contractor developed text of the Risk Assessment and Loss Avoidance Studies; updated the hazard profiles to include information on recent hazard events and new hazard zone maps, as available; facilitated review of hazard profiles by hazard experts; and updated GIS maps with newer data. The EMD Hazard Mitigation Strategist incorporated the state’s Hazard Identification and Vulnerability Assessment (HIVA) into the ESHMP’s hazard profiles to fulfill the Revised Code of Washington (RCW) and the state’s Comprehensive Emergency Management Plan (CEMP) requirements. This consolidates the update cycle for both the HIVA and the ESHMP.

The 2013 SHMP includes the nine natural hazard profiles from the 2010 plan with Climate Change no longer a standalone hazard profile but a section within each hazard profile since climate change affects the various natural and manmade hazards differently. Avalanche, Drought, Earthquake, Fire, Flood, Landslide, Severe Storm, Tsunami, and Volcano profiles were updated with newer statistics, best available science, HIVA elements, and an eye to reduce the narrative to be more succinct. Two new technological hazard profiles were added to the plan during this update cycle: Animal, Crop and Plant Disease and Infestation Outbreak plus Terrorism. Public Health was expanded and renamed Communicable Disease Outbreaks, Epidemics, and Pandemics. Urban Fire and Wildland Fire profiles were combined in a single profile. The Hazardous Materials profile added specific chemical, biological, radioactive, nuclear, and explosive (CBRNE) sites within Washington State from the 2009 Statewide Hazard Identification and Vulnerability Assessment (HIVA). Dam Safety profile included a placeholder for levees since federal policy and accreditation processes are evolving and could significantly impact future flood modeling. The pipeline profile received a simple update. Leading into the plan’s public comment period was increased discussion on creating a Cyber Security profile, which will be further developed during the 2016 plan update cycle. These profiles were integrated into Element B following the new FEMA format.

Mitigation Strategy – The EMD Hazard Mitigation Strategist updated the state agency mitigation action item matrix, funding sources, and accomplishments in a table format. The SHMAT extended the 2010 plan’s strategy, goals, objectives and initiatives to the 2013 update. This component was integrated into Element C following the new FEMA format.

Enhanced Plan – The EMD Hazard Mitigation Strategist updated this section of the plan with initiatives that have taken place since the 2010 plan plus evidence supporting the State’s ability to manage and maintain the various mitigation grant programs. This component was integrated into Element Enhanced following the new FEMA format.



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Hazard Mitigation Programs Administrative Plan – The EMD Hazard Mitigation Strategist incorporated the 2012 edition of the Administrative Plan in its entirety using the most recent 2012 disaster DR-4083. This component was integrated into Appendix 9 following the new FEMA format.

Loss Avoidance Study - The EMD Hazard Mitigation Strategist provided support to the contractor that developed the Loss Avoidance Studies (LAS) for Washington State and coordination with outside state and federal agencies associated with the studies. The LAS included detailed analysis of the effectiveness of various mitigation projects which have occurred in Lewis County for flood and Western Washington for seismic. The Lewis County Loss Avoidance Study evaluated flood mitigation projects funded since the 2006 flood in and near the City of Centralia. The Western Washington Seismic Loss Avoidance Study evaluated seismic retrofit projects since the Nisqually Earthquake in 2001. Both studies showed the projects provided substantial loss avoidance for future disasters. The Loss Avoidance Studies were modeled after the FEMA Best Practices snapshots. These Loss Avoidance Studies meet the requirements of 44 CFR 201.5(b)(2)(iv). These studies were integrated into Appendix 10 and Appendix 11 following the new FEMA format.

Appendices – The Hazard Mitigation Strategist reorganized the appendices. This section houses supplemental information for the plan that is nonetheless still important to the plan. The eighty pages of state agency mitigation strategy action items is a prime example. The intent was to increase readability without losing this information. It was reformatted and condensed. The previous 2010 plan's tabs for methodology, best practices, and best available science were moved into appendices. Overall, the appendices contains federal funding sources, open mitigation strategies action items, completed mitigation strategies action items, integration with other planning initiatives, methodology, best practices and projects, best available science, local plan hazard vulnerability analysis, plan change record, and the FEMA crosswalk.

Adoption of the State Hazard Mitigation Plan

The 2013 SHMP, standard plan, as defined in 44 CFR 201.4 will be adopted by a promulgated memorandum to agencies of state government by the State Military Department, Emergency Management Division Director. This will be done following receipt from FEMA Region X of a notice of "pre-adoption" approval of the plan. FEMA will receive a copy of the adoption / promulgation memorandum immediately upon its issuance. Copies of documentation showing FEMA Region X's formal approval of the plan and state adoption of the plan will become part of this plan upon their issuance.



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State Hazard Mitigation Advisory Team

The EMD Mitigation, Response, and Recovery Section assembled and convened the State Hazard Mitigation Advisory Team (SHMAT) to provide guidance and assistance with the review and revision of the SHMP back in 2002. The team functions as an advisor to the State Hazard Mitigation Strategist on hazard mitigation efforts, including ongoing review of the SHMP and its revision every three years.

The SHMAT assists with preparing and revising the SHMP by:

- Reviewing profiles of natural and manmade hazards.
- Reviewing hazard mitigation planning practices and identifying progress made on actions recommended in the previous SHMP Mitigation Strategy.
- Reviewing and updating goals, objectives and strategies for each SHMP.
- Providing recommendations to enhance the SHMP.

Members of the team provide a variety of expertise and perspective to the planning process, including emergency management, natural hazards, land-use planning, building codes, transportation, and infrastructure. Most members are from state agencies. Additionally, SHMAT members participate in county-level exercises; provide hazard specific training to state and local emergency managers; and assist in exercise scenario development.

The State Hazard Mitigation Advisory Team (SHMAT) met in December 2010 and discussed the plan's update process and its timeline; discussed the state plan mitigation strategy goals, objectives and initiatives; reviewed the natural hazard profiles; made determinations of vulnerability to natural hazards; discussed which best science to include in update; scoped loss estimation for the loss avoidance study; and reviewed the membership of the SHMAT. The strategy goals, objectives and initiatives were approved and extended to the 2013 plan. It was decided the Risk Assessment and Loss Avoidance Studies would be contracted out to a vendor with expertise in this area.

EMD management decided to incorporate Hazard Identification and Vulnerability Assessment (HIVA) into the SHMP in June 2011. The HIVA is a state requirement while the SHMP has a FEMA required update cycle. Combining the two documents meets both state and federal requirements while creating administrative efficiency.

Between 2010 and 2013, the SHMAT lost a third of its members due to retirements, reductions in force, and career advancement opportunities. Alternate members were recruited in 2012 through personal contacts, leads from other interagency working groups, agency promotions (under the guise of other duties as assigned), and inter-agency solicitations.



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The State Hazard Mitigation Advisory Team (SHMAT) met in January 2013 and reviewed the updated SHMP and approved its content; specifically reviewed hazard profiles of interest and confirmed their accuracy; reviewed the SHMP’s other sections and concurred with the updates; and discussed legislative actions which have the potential to impact mitigation initiatives. The mitigation strategies for the state agencies were reviewed and confirmed; suggestions were made and incorporated for SHMAT strategies to enhance mitigation planning state-wide; followed by a discussion about future meetings and schedules. A key message from this meeting was the SHMAT members are an advisory body, subject matter hazard experts, and coordinators for agency input; they are not ambassadors for mitigation measures within their agencies. The strategist volunteered to provide quarterly update emails on mitigation measure metrics, implementation successes, and pertinent case studies / new science to the SHMAT in order to share information without scheduling formal meetings.

State Hazard Mitigation Advisory Team (SHMAT) last updated 31 January 2013

Name	Title	Organization	Expertise
	Emergency Preparedness Coordinator	Resource Protection Division, DNR	Wildfire
Jeannie Abbott			
Hedia Adelman	Senior Policy Advisor	Department of Ecology Growth Management	Climate Policy
Leonard Bauer	Managing Director	Services, Commerce Utility & Transportation	Growth Management
Rebecca Beaton	Infrastructure Analyst	Commission Office State Fire Marshal,	Lifelines
Ron Bowen	Deputy Fire Marshal	WSP	HazMat
	Warning Coordination	NWS, Seattle Forecast	
Ted Buehner	Meteorologist	Office	Weather
Marisa D’Angeli	Epidemiologist	CD-Epi Division, DOH	Pandemic
	Floodplain Mapping		
Jerry Franklin	Coordinator	Department of Ecology	Flood
	Safety and Emergency		
John Himmel	Operations Manager	WSDOT	Transportation
	Mitigation & Recovery	Emergency Management,	Emergency
Sheryl Jardine	Section Manager	WMD	Management
		Utility & Transportation	
Doug Kilpatrick	Pipeline Safety Director	Commission	Lifelines
Scott McKinney	NFIP State Coordinator	Department of Ecology	Flood
		Emergency Preparedness,	
Anne Merritt	Health Services Consultant	WA DOH	Pandemic
Kristen Meyers	Mitigation Planning	FEMA, Region X	ex-officio



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	Manager	Mitigation	
Jill Nordstrom	Functional Program Analyst	Office of the Insurance Commissioner	Insurance
Tim Nogler	Managing Director	State Building Code Council, DES	Building Codes
Gus Ordonez	Environmental Engineer	Department of Ecology	Dam Safety
Isabelle Sarikhan	Hazard Geologist and GIS Analyst	Division of Geology and Earth Resources, DNR	Landslides
John Schelling	Earthquake Program Manager	Emergency Management, WMD	Earthquake, Tsunami, Volcano
Joe Schmit	Emergency Management Specialist	WSDOT	Transportation
Stephen Slaughter	Hazard Geologist	Division of Geology and Earth Resources, DNR	Earthquake, Tsunami, Volcano
Peter Tassoni	Hazard Mitigation Strategist	Emergency Management, WMD	ex-officio
Tim Walsh	Chief Geologist	Division of Geology and Earth Resources, DNR	Earthquake, Landslide, Tsunami, Volcano
Julie Whaley	Emergency Management Coordinator	WSDOT	Transportation
Vacant	Seismologist	Pacific Northwest Seismograph Network	Earthquake
Vacant	Volcanologist	USGS – Cascade Volcano Observatory	Volcano
Vacant	Emergency Management Coordinator / Director	County DEM	Emergency Management

Public Outreach and Technical Assistance

With the frequent staff turnover in the State Hazard Mitigation Strategist position during 2010-2012 period combined with the introduction of the FEMA Local Mitigation Plan Review Guide and Crosswalk update, the state decided to continue providing HMGP funded training and technical assistance opportunities either through FEMA delivered classroom courses or state mitigation section staff delivered webinars to local jurisdictions and state agencies instead of surveying the public and stakeholders for greater input into the SHMP update process. HMGP Grant Coordinators and the State Hazard Mitigation Strategist reviewed local hazard mitigation plans and planning efforts and provided technical assistance as requested from local jurisdictions. There is another bubble of local hazard



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mitigation plans coming due in 2014-2016. Many of the more urbanized counties have already begun their update processes. The 2013 SHMP will be the fourth edition of the SHMP. The planning process and the plan are relatively mature. New best available science was incorporated, four new hazard profiles were created, and risk assessments and consequences were updated. The economic downturn has significantly curtailed mitigation activities at the state agency level and shattered hazard mitigation planning efforts at the local jurisdictional level.

Nonetheless, the SHMP is on the agency's public website and available for review and comment 24/7/365. The SHMAT meets formally at least once a year and sometimes twice to review components of the SHMP. SHMAT members and the EMD hazard mitigation strategist exchange emails, correspondence, and phone calls on specific plan topics throughout the calendar year. Key members of the SHMAT and EMD Mitigation, Response and Recovery Section review the plan after each major disaster declaration. The state's advisory and governing body, the Emergency Management Council, revisits the SHMP at least once every three years. The Washington State Emergency Management Director was the former NEMA president and previous NEMA mitigation committee chair so the SHMP gets regular attention by the agency's executive management team. There is a regular dialogue between the State Hazard Mitigation Strategist and stakeholders interested in mitigation actions.

Besides the 2010 plan's availability on the EMD website for public and stakeholder review, use, and comment, the SHMAT met in January 2013 to review the updated 2013 plan. As a consulting body with no authority to approve the plan, the SHMAT nonetheless accepted the updated plan. The retiring EMD Director reviewed key components of the updated plan in February 2013 and provided comments that were incorporated. The new EMD Director reviewed the updated plan in June 2013 and provided comments that were incorporated. The updated plan (watermarked as draft plan for public comment) was uploaded to the EMD website in early summer for public and stakeholder comments and extended through the FEMA Region X mitigation team's review of the state's updated 2013 plan. Upon receipt of FEMA's Approved Pending Adoption (APA) status, the updated plan will be taken down from the EMD website temporarily to remove the "draft" watermark, incorporate any FEMA, public, and stakeholder comments, incorporate scanned copies of the approval documents, and reposted to the EMD website as the final 2013 State Enhanced Hazard Mitigation Plan for continued use by the public and interested stakeholders. Additionally, the 2010 plan will be taken down from the EMD website.



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II. Coordination Among Agencies and Program Integration

Requirement 44 CFR §201.4(b): *Planning Process*. An effective planning process is essential in developing and maintaining a good plan. The mitigation planning process should include coordination with other State agencies, appropriate Federal agencies, interested groups, and be integrated to the extent possible with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives.

State Agency Participation in the Washington State ESHMP

Participation of state agencies was important in the revision of the state plan. The following agencies participated by updating information about their facilities used to determine vulnerability to various hazards, reviewing actions identified in the previous SHMP, and identifying potential mitigation actions to respond to identified vulnerabilities.

State Agencies Participating in State Hazard Mitigation Plan	
Agency	Participating Staff
Department of Agriculture	Dave Hodgeboom, Mike Presswood
Department of Commerce	Leonard Bauer
Washington State Conservation Commission	Bill Eller
Department of Ecology	Scott McKinney, Jerry Franklin, Dave Byers, Gus Ordonez, Sadie Whitener, Hedia Adelsman
Department of Employment Security	Arthur Florence
Department of Enterprise Services	Bob Bippert
Economic and Revenue Forecast Council	Desiree Monroy
Environmental and Land Use Hearing Office	Robyn Bryant
Department of Health	David Owens
Department of Information Services	Mary Beth Sweeten
Department of Labor and Industries	Chuck Hennigan
Department of Licensing	John Reda
Liquor Control Board	Mike Wolfe
Marine Employees Commission	Kathy Marshall
Military Department	Sheryl Jardine, Peter Tassoni
Department of Natural Resources	Tim Walsh, Jeannie Abbott, Isabelle Sarikhan, Ray Cakir, Stephen Slaughter
Department of Fish and Wildlife	Bill Phillips



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Office of the Attorney General	Cami Feek
Office of Financial Management	Laurie Wood
Office of the Insurance Commissioner	Jill Nordstrom
Office of the Superintendent of Public Instruction	Barbara Thurman, Robert Dengel
Department of Revenue	Jim Hazzard
State School for the Blind	Rob Tracey
Department of Social and Health Services	Sue Bush
State Auditor's Office	Marie Davis
Department of Transportation	John Himmel, Joe Schmit, Julie Whaley
University of Washington	Siri-Elizabeth McLean
Utilities and Transportation Commission	Sondra Walsh
Washington Horse Racing Commission	Robert Lopez
Washington State Parks Dept.	Kimberly Heinrich
Western Washington University	Gayle Shipley
Big Bend Community College	Ryan Leonard, PhD, Gail Hamburg
Columbia Basin Community College	Brady Brookes
Grays Harbor Community College	Tony Simone
Highline Community College	Larry Yok
Olympic College	Bill Wilkie
Wenatchee Valley Community College	Bruce Merighi
Yakima Valley Community College	Jeff Wood
FEMA Region X	Kristen Meyers, Brett Holt
NOAA	Ted Buehner, Tyree Wilde
USGS	Craig Weaver, Nathan Wood

Review of Hazard Profiles:

To ensure the accuracy and completeness of information on hazards, validate criteria to identify local jurisdictions most vulnerable to each hazard, and ensure conformity to federal hazard mitigation planning requirements, each revised Hazard Profile was review by at least one hazard expert. The EMD Mitigation and Recovery Section directed and managed the review process. Hazard experts from a variety of state and federal organizations and academic institutions conducted a review of each profile.

Avalanche:

- Dr. Mark Moore, Director and Avalanche Meteorologist, Northwest Weather and Avalanche Center.



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Drought:

- Brian Bower, Senior Service Hydrologist, National Weather Service, Seattle.

Earthquake:

- Tim Walsh, Chief Geologist, Division of Geology and Earth Resources, Washington Department of Natural Resources.
- Craig Weaver, Seismologist, U.S. Geological Survey.
- Nathan Wood, Research Geographer, U.S. Geological Survey.
- Brian Atwater, Research Scientist, U.S. Geological Survey, and Affiliate Professor, Quaternary Research Center, Department of Earth and Space Sciences, University of Washington.
- John Vidale, State Seismologist, University of Washington.
- John Schelling, Program Manager, Earthquake, Tsunami, and Volcano Program, Washington State Emergency Management Division.

Flood:

- Scott McKinney, National Flood Insurance Program State Coordinator, Washington Department of Ecology.
- Jerry Franklin, National Flood Insurance Program Mapping Specialist, Washington Department of Ecology.

Landslide:

- Tim Walsh, Chief Geologist, Division of Geology and Earth Resources, Washington Department of Natural Resources.
- Isabelle Sarikhan, Hazards Geologist and GIS Analyst, Division of Geology and Earth Resources, Washington Department of Natural Resources.
- Dr. Dave Montgomery, Professor, Department of Earth and Space Sciences, and Director, Quaternary Research Center, University of Washington.

Severe Storm:

- Ted Buehner, Warning Coordination Meteorologist, National Weather Service, Seattle Forecast Office.
- Tyree Wilde, Warning Coordination Meteorologist, National Weather Service, Portland Forecast Office.

Tsunami:

- Tim Walsh, Chief Geologist, Division of Geology and Earth Resources, Washington Department of Natural Resources.
- Brian Atwater, Research Scientist, U.S. Geological Survey, and Affiliate Professor, Quaternary Research Center, Department of Earth and Space Sciences, University of Washington.



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- Hal Mofjeld, Affiliate Professor, School of Oceanography, University of Washington.
- Dr. Aggeliki Barberopoulou, Researcher, Tsunami Research Center, Viterbi School of Engineering, University of Southern California.
- Dr. Nathan Wood, Research Geographer, U.S. Geological Survey.
- Dr. Vasily Titov, Chief Scientist, Center for Tsunami Research, National Oceanic and Atmospheric Administration, Sand Point.
- Dr. Diego Arcas, Tsunami Modeler, Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration.
- John Schelling, Program Manager, Earthquake, Tsunami, and Volcano Program, Washington State Emergency Management Division.

Volcano:

- Dr. William Scott, Scientist-in-Charge, Cascades Volcano Observatory, U.S. Geological Survey.
- John Schelling, Program Manager, Earthquake, Tsunami, and Volcano Program, Washington State Emergency Management Division.

Wildland and Urban Fire:

- Jeannie Abbott, Emergency Preparedness Coordinator, Resource Protection Division, Washington Department of Natural Resources.

Dam Safety:

- Doug Johnson, Public Engineer, Washington State Department of Ecology, Dam Safety Program.
- Gus Ordonez, Environmental Engineer, Washington State Department of Ecology, Dam Safety Program.

Hazardous Materials:

- David Byers, Response Manager, Washington State Department of Ecology.
- Sadie Whitener, Environmental Specialist, Washington State Department of Ecology.
- Ron Bowen, Deputy State Fire Marshal, Washington State Patrol.

Pipeline Safety:

- Scott Zimmerman, Pipeline Coordinator, Spill Prevention Preparedness and Response Program, Washington State Department of Ecology.

Public Health Communicable Disease Outbreak, Epidemic, Pandemic:

- Dan Banks, Emergency Response Exercise and Plans Coordinator, Washington State Department of Health.
- Annie Merritt, Public Health Emergency Preparedness and Response, Washington State Department of Health.



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Terrorism:

- Kia Graham, Criminal Intelligence Analyst, Washington State Fusion Center.

Integration of State Planning Efforts

Hazard mitigation planning is integrated into several key state planning initiatives and mitigation programs. The primary examples are the Growth Management Act, Shoreline Management Act, International Building Codes Program, the Flood Control Assistance Account Program, the Transportation Partnership Account, Puget Sound Partnership Action Agenda, Ecology Climate Adaptation Plan, Ecology State Ocean Caucus, DNR forest management practices to prevent wildfires and Community Wildfire Prevention Plans, and the FEMA-funded, state-administered hazard mitigation programs. Additional synergetic planning efforts include the U.S. Army Corps of Engineers Silver Jackets program and The Nature Conservancy Floodplains by Design initiative. Details of these efforts are provided in the Enhanced Element.



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The Washington State Hazard Mitigation Plan (SHMP) is a living document and will be reviewed, updated, and adopted by state officials and submitted to the Federal Emergency Management Agency (FEMA) for approval every three years. The plan will be revised more frequently if conditions under which the plan was developed materially change – through new or revised state policy, a major disaster, or availability of funding, – to reflect the new reality of hazard mitigation in Washington State.

This section describes the identified framework through which the plan will be reviewed and revised, as well as revisions being made to the process for the 2013 plan.

Monitoring, Evaluating, and Updating the Plan

Requirement 44 CFR §201.4(c)(5)(i): *Plan Content.* To be effective the plan must include a *Plan Maintenance Process* that includes an established method and schedule for monitoring, evaluating, and updating the plan.

Participants

The Mitigation and Recovery Section of the State Emergency Management Division (EMD) is responsible for developing and maintaining the SHMP. The section's Hazard Mitigation Strategist is the individual responsible for overseeing this work.

Participants in the plan's maintenance process include the members of the State Hazard Mitigation Advisory Team (SHMAT) and representatives of the agencies of Washington State Government that participated in development of the state plan.

Schedule

The state plan review will take place in three ways:

1. Annually, for progress made on mitigation actions and projects identified in the Mitigation Strategy of the state plan and in the agency annexes. This is typically done in April through an email based survey to state agencies.



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2. After each major disaster in Washington State declared by the President, to look for areas where the state plan should be refocused due to the impact of the disaster. This is typically done by key members of the SHMAT and the Mitigation and Recovery Section.
3. Every three years, before submission to FEMA for approval. Typically, the SHMAT provides advisory direction to the State Hazard Mitigation Strategist who revises all the plans components and facilitates their review by subject matter experts.

Annual Progress Review

The purpose of the annual review is to gauge the progress as well as any changed conditions that may affect hazard mitigation planning and implementation in Washington State. The state plan will be revised annually only as necessary to reflect significant policy changes that took place during the preceding year or during the state's legislative session (typically January through April of each year).

Review on progress implementing the actions and projects identified in the state plan's Mitigation Strategy will occur annually. State agencies that are part of the state plan will submit brief progress reports on an annual basis during the spring but before the end of the state budget biennium. Information from these reports will form the basis for a summary of progress submitted by EMD's Mitigation and Recovery Section for the annual report of the State Emergency Management Council.

Once a year, the SHMAT and the participating state agencies in the plan will:

- Review and revise the state plan's Risk Assessment as necessary to ensure its currency. This will include a review and update of hazard profiles and data on vulnerable state facilities as new information becomes available.
- Examine progress on mitigation actions and projects in the state plan's Mitigation Strategy Action Item or Action Agenda.
- Identify implementation problems (technical, political, legal, and financial).
- Recommend how to increase involvement by state agencies and local jurisdictions in hazard mitigation.
- Recommend revisions to the Risk Assessment and to the Mitigation Strategy's goals and objectives, projects and timelines only to reflect major changes in policies, priorities, programs, and funding.

The 2010 process was revised repeatedly in 2011 and 2012 to better align with the resource capabilities of the State and more specifically the Mitigation Response and Recovery Section. The changes reflect the needs of the State and lessons learned during the previous 3-year planning period.



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Plan maintenance implies an ongoing effort to monitor and evaluate plan implementation and to update the plan as progress, roadblocks, or changing circumstances are recognized. During the current update cycle, the state faced some significant roadblocks that impacted not only the plan's update, but also the plan's status with respect to the mitigation activities of the state agencies. Due to limited state revenue, many of the action items that had an anticipated end date during the lifespan of the 2010 plan did not occur. Therefore, those action items that were not completed were continued into the 2013 plan. Some of the action items became obsolete or are no longer practical, and were removed from the general strategies. See *Appendix 3 Completed or Removed Mitigation Strategy Action Items* for details. Additionally, staff turnover in the State Hazard Mitigation Strategist position slowed outreach and update efforts.

As was with previous plan editions and for the 2013-2016 update cycle, various plan elements will be monitored, evaluated, and updated throughout the three-year planning period via the strategist, with the SHMAT monitoring efforts and providing information as needed and/or requested. It was also determined the most efficient way to lead the update effort is to manage the Plan as any large project. As such, there will be a dedicated mitigation staff member assigned to monitor and evaluate the Plan throughout the three-year update process.

In coordination with the SHMAT, the strategist will manage the following:

- Progress made on goals and objectives;
- Modifications to the State risk and vulnerabilities as needed;
- Implementation of mitigation actions and projects; and
- Changes in policies or programs discussed in the Plan

If needed, sub-groups will be established with representatives from the various SHMAT agencies and organizations responsible for reviewing the plan and providing input and suggested changes. This input will be based on subject matter expertise, on-going studies, best available science, and mitigation initiatives being undertaken by SHMAT members and their respective agencies or organizations. Additional emphasis will be placed on developing a system for tracking mitigation strategies, and assisting the state agencies in developing more in-depth action items.

During the planning period, state agencies will:

- Review hazard mitigation projects and initiatives and report on progress of completed, deleted, or deferred projects, as well as reporting any new initiatives/projects.
- State agencies will also review existing state/federal programs to ensure that the state is taking full advantage of possible funding sources in its implementation of the state hazard mitigation program.
- Continue working on a method of Risk Assessment which can be utilized by the local jurisdiction plans. The next plan edition should include economic and social risk ranking criteria.



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- Develop a method of capturing in greater detail the strategies of the local jurisdictions for inclusion within the State's plan. The focus of these strategies should be geared towards those strategies, which are significant in nature, not generic or overly broad.

Separate agency annexes to the state plan, each with separate narratives and mitigation goals, objectives, and action items, will not be required. Continuing with this plan, one set of mitigation goals will cover all participating agencies, and all agency mitigation action items will be included into one table. See *Appendix 2 Open Mitigation Strategy Action Items* for details. State agency participation will continue to be required in the plan review and revision process. Annual progress reports by participating state agencies continue to be required.

Post-Disaster Review

The purpose of the post disaster review is to gauge whether there are any changed conditions that may affect hazard mitigation planning and implementation in Washington State as a result of the disaster. Representatives from state government agencies that participated in the state plan, members of the SHMAT with subject matter expertise in the specific hazard that triggered the declared disaster, and the Mitigation and Recovery Section decision makers will meet to evaluate the disaster's impact on ongoing projects and planning efforts.

After each presidentially declared major disaster in Washington State, EMD's Mitigation and Recovery Section will document the effects of the disaster, and convene the SHMAT to examine the disaster and, as necessary, develop recommendations to improve resistance to the hazard. This process allows for a review of the state plan and the impacts of the hazard that caused the event, as well as providing an opportunity to determine whether any of the Mitigation Strategies require revisions.

In documenting the disaster, EMD's Mitigation and Recovery Section may consult representatives from FEMA, appropriate state and local agencies, and private sector partners impacted by the disaster. If determined necessary, approximately six months after the event, the Mitigation Section will prepare and disseminate a report outlining the disaster and its impact, and propose new or revised recommendations for the state plan's Mitigation Strategy.

Such a post-disaster review may replace an annual review in any year a major disaster event occurs, depending upon severity of the disaster event and on the timing of the survey and the state plan's annual progress review.

The state received three disaster declarations after approval of the 2010 plan:

- January 2011 Severe Winter Storms (DR-1963);



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- January 2012 Severe Winter Storm (DR-4056); and
- July 2012 Wind Storm (DR-4083).

The Hazard Mitigation Strategist met with the SHMAT to review the Severe Storm, Landslide, and Flooding profiles after these events occurred. It was determined that the profiles remained fairly current as written, with the exception of inclusion of the new disaster events in the historical data portion of the profile. The Strategist and SHMAT concluded that the profiles would be updated with new information during the normal update cycle, which was already underway at the time the team met. Additionally, EMD's Mitigation and Recovery Section documented impacts of the disasters to make certain accurate information would be included.

The Mitigation staff at the Joint Field Office also requested Losses Avoided Studies be conducted for properties impacted by the disasters. The projects included in this study were:

- Drainage improvements consisting of a culvert upsizing and channel dredging in the City of Issaquah, and
- Installation of a flood drainage gate along the Stillaguamish River levee near the City of Stanwood.

The drainage improvement projects reported an overall Return on Investment of 96.7% successful after only two years into the project's useful life cycle.

Three-Year Plan Update

Every three years, EMD's Mitigation and Recovery Section, will facilitate an update of the Washington SHMP prior to its submission to FEMA for approval. Review and revision will involve SHMAT, state agencies, and local jurisdictions whose plans influenced development of the state plan. Additionally, the SHMP will be coordinated with other state agency plans, as appropriate.

Approximately 24 months before FEMA approval is required, the HIVA or THIRA review and incorporation will be completed. Additionally, appropriate CDMS updates and Hazus runs will be completed. Approximately 12 months before FEMA approval is required, the hazard profiles review and incorporation will be completed. Additionally, the loss avoidance study will be completed. Approximately 6 months before FEMA approval is required, the EMD internal approval review and public comment period will commence.

It is the state's intent that the 2013 edition of the plan should continue to address both natural and manmade or technological hazards. The state plan's Risk Assessment will incorporate profiles for each of the identified manmade or technological hazards that affect Washington State.



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To the extent possible, local multi-jurisdiction hazard mitigation plans completed as of the start of the three-year update cycle will provide the basis for revising the state plan, especially those sections related to hazard identification and risk assessment.

During the 2010-2013 update cycle it was the intent of State and FEMA Region X to work together in an attempt to develop a method to incorporate already existing plans such as Flood Hazard Management / Mitigation Plans, Comprehensive Wildfire Protection Plans, Endangered Species Act fish habitat restoration efforts etc., into the appropriate components of the local jurisdiction's mitigation plan in an effort to reduce redundancy in planning efforts.

The following framework will be used for the three-year plan update prior to the state plan's submission to FEMA in 2013:

- Continue to involve SHMAT members, participating state agencies, and local jurisdictions as appropriate in the review and update process.
- Hazard and risk-assessment information in local plans that are revised and approved by FEMA by the fall of 2012 will be reviewed and considered in the 2013 state plan update process.
- New information and maps, as available, will be included in the hazard profiles. Additionally, hazard experts will review the profiles for completeness and accuracy.
- Participating state agencies and SHMAT members will review the progress on mitigation actions identified in the 2010 Mitigation Strategy of this plan.
- Effectiveness of state-funded, Local Mitigation Projects will be addressed in the section of the state plan entitled "Loss Avoidance Study," per the requirements of 44 CFR 201.5.b.2.iv.
- The EMD Mitigation and Recovery Section in conjunction with SHMAT members will examine issues related to implementing mitigation actions identified in this plan and make recommendations for their resolution in the 2013 plan.

Increase State, Local Participation in Hazard Mitigation:

The EMD Mitigation and Recovery Section will continue its outreach to state agencies in a variety of ways, including but not limited to State Agency Liaison meetings; one-on-one meetings with agency staff; through critical infrastructure protection, homeland security, and other related planning initiatives; and through the office of The Adjutant General, State Military Department, to the Governor's Cabinet, as necessary.

Section staff also will continue outreach to local jurisdictions through presentations at conferences, web-based trainings, one-on-one technical assistance visits, scheduling of mitigation-related training



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and workshops (mitigation planning, benefit-cost analysis, application preparation, etc.), and continued communication through phone, email, and Internet.

An inventory of state-owned and leased facilities maintained annually by the State Office of Financial Management will again be used as the facilities database for the 2013 SHMP. Use of this database will continue to be expanded in the coming years to meet the needs of a variety of state planning initiatives, including hazard mitigation; this will streamline the collection of information on state facilities, reduce the burden on state agencies participating in the state hazard mitigation planning initiative, and should encourage increased participation.

SHMAT members, hazard experts, and others will continue to review the various elements of the plan, and assist with the update of the Risk Assessment and Mitigation Strategy portions for the 2013 plan.

The EMD Mitigation and Recovery Section will continue to monitor the process of maintaining the state plan, involving SHMAT and others as needed and appropriate.

In coordination with FEMA Region X, establish a subcommittee of the State Advisory Team to explore the feasibility of integrating hazard mitigation with other statewide planning initiatives.

The three-year review of the plan began in earnest August 2012, with involvement from SHMAT and participating state agencies occurring electronically throughout the update cycle. All natural hazard profiles were updated and several new man-made / technological hazards were incorporated. The state Hazard Identification and Vulnerability Assessment (HIVA) was incorporated. An inventory of state-owned and leased facilities maintained annually by the State Office of Financial Management was used in the HAZUS 2.1 runs. The EMD Mitigation and Recovery Section increased outreach to local jurisdictions through presentations at conferences, one-on-one technical assistance visits, scheduling of mitigation-related training and workshops (mitigation planning, benefit-cost analysis, application preparation, etc.) mostly via webinars, and increased communication through phone, email and Internet. Local hazard mitigation plans were reviewed in December 2012 for hazard information and potential losses from risk assessments that potentially could be incorporated into this update of the state plan. The plan's format was changed in spring 2013 to conform to the release of the FEMA State Tool Guide.



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Monitoring Progress of Mitigation Activities

Requirement 44 CFR §201.4(c)(5)(ii & iii): Plan Content. To be effective the plan must include a *Plan Maintenance Process* that includes:

- A system for monitoring implementation of mitigation measures and project closeouts.
- A system for reviewing progress on achieving goals as well as activities and projects identified in the Mitigation Strategy.

Review

The process used to monitor the implementation of mitigation measures and project closeouts will be similar to the one used to monitor, evaluate and update the plan. EMD's Mitigation and Recovery Section is responsible for monitoring implementation of projects identified in the state plan. The section's Hazard Mitigation Strategist will oversee this work.

Review on progress implementing the actions and projects identified in the state plan's Mitigation Strategy will occur once a year. State agencies that are part of the state plan will submit brief progress reports on an annual basis, in April. The EMD Mitigation and Recovery Section will track progress of actions and projects identified in the state plan.

Once a year, the SHMAT and the state agencies that are part of the plan will:

- Examine progress on mitigation actions and projects in the state plan's Mitigation Strategy and in agency annexes, using information from progress reports and the project database.
- Identify implementation problems (technical, political, legal, and financial) and, as appropriate, develop recommendations and strategies to overcome them.
- Develop a summary of progress for the annual report of the Governor's Emergency Management Council submitted by EMD's Mitigation Section.

State agencies with projects identified that end up funded by the HMGP, the PDM, the FMA, and other federally funded mitigation grant programs, will be required to make quarterly reports of progress to EMD's Mitigation and Recovery Section. Additionally, agencies and local governments receiving hazard mitigation grants are required to submit a closeout report at the conclusion of any grant-funded project. Information from these reports will be tracked on an annual basis and reconciled with the April reports.



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Consequently, state agencies provided two annual reports and SHMAT was convened in December 2010 and January 2013 to examine the progress on implementation of mitigation actions. The State Hazard Mitigation Programs Manager made quarterly reports to FEMA on progress implementing mitigation grant-funded projects and conducted project monitoring and closeout activities as described in the state's *Hazard Mitigation Programs Administrative Plan*. EMD Mitigation and Recovery Section staff prepared an annual report of mitigation activities that was included in the annual report of the Governor's Emergency Management Council.