APPENDIX 4-D:

POLICIES, PROGRAMS, CAPABILITIES AND FUNDING

State Pre-Disaster Hazard Management Policies

Multi-Hazard

STATEWIDE LAND USE PLANNING GOALS RELATED TO NATURAL HAZARDS

Goal 2: Land Use Planning

Statewide Land Use Planning Goal 2 establishes a land use planning process and policy framework as a basis for decisions and actions related to use of land. It also assures that an adequate factual base exists for such decisions and actions.

In Oregon, every city and county has a comprehensive plan that includes inventories and implementation measures (e.g., laws and ordinances) to guide community land use decisions. Comprehensive plans are required to address local concerns and issues raised by each of the state's nineteen land use planning goals. Goal 7, for example, specifically applies to natural hazards and requires local governments to develop inventories, policies, and ordinances that reduce risk to people and property from natural hazards.

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces

Statewide Land Use Planning Goal 5 requires local governments to adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. Conservation of resources promotes a healthy environment and natural landscape that contributes to Oregon's livability.

Goal 7: Areas Subject to Natural Hazards

Statewide Land Use Planning Goal 7 aims to protect people and property from natural hazards. Local governments are required to adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards. Natural hazards for the purpose of this goal are: floods (coastal and riverine), landslides1, earthquakes and related hazards, tsunamis, coastal erosion, and wildfires. Local governments may also identify and plan for other natural hazards.

Governor's Emergency Recovery Framework Exec. Order No. 08-20

This executive order established an advisory group (the Governor's Recovery Planning Cell (RPC)) to direct emergency recovery in Oregon during times of significant crisis. The RPC is comprised of emergency recovery advisors, state agency leadership, and others as the situation requires. The RPC provides overall

[1] For "rapidly moving landslides," the requirements of ORS 195.250-195.275 (1999 edition) apply.

leadership in coordinating private and governmental sector emergency recovery efforts, and it is charged with the development and initial execution of a "day after" plan associated with recovery efforts

In January 2010, the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center received a grant from the Hazard Mitigation Grant Program (HMGP) to facilitate and document the State's Enhanced Natural Hazards Mitigation Plan update process. As part of the plan update process, OPDR and the Department of Land Conservation and Development (DLCD) were tasked with conducting a survey of natural hazards mitigation planning in Oregon.

The survey assessed: 1) the extent to which natural hazards mitigation strategies were being implemented at the local level; and 2) the availability and applicability of technical resources designed to assist jurisdictions in planning for or mitigating the effects of natural hazards. Additionally, the survey asked for suggestions on how to make hazards planning and mitigation more effective at both the state and local levels.

The full survey can be found at the following URL: http://csc.uoregon.edu/opdr/node/320

Coastal Hazards

Statewide Land Use Planning Goals Related to Natural Hazards

Goal 15: Willamette River Greenway

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

Goal 16: Coastal Estuaries

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and To protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries. Comprehensive management programs to achieve these objectives shall be developed by appropriate local, state, and federal agencies for all estuaries.

Goal 17: Coastal Shorelands

Statewide Land Use Planning Goal 17 is concerned with conservation and protection, as well as appropriate development of Oregon's coastal shorelands. It aims to reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat resulting from the use and enjoyment of Oregon's coastal shorelands.

Goal 18: Beaches and Dunes

The purpose of Statewide Land Use Planning Goal 18 is to conserve, protect, and where appropriate, to either develop on or restore resources and benefits of coastal beach and dune areas. It is also concerned with reducing the hazard to

human life and property from natural or man-induced actions associated with these areas.

Ocean Shore Regulation

The Oregon Parks and Recreation Department (OPRD) is responsible for protecting the scenic, recreational, and natural resource values of the Oregon coast. OPRD accomplishes this through an extensive permitting program for shoreline protection under the authority of The Ocean Shore Law (ORS 390.605-390.770), also known as the "Beach Bill." While not responsible for activities above the statutory vegetation line, the survey line, or the line of established vegetation, OPRD is the permitting authority for actions affecting the ocean shorelands. This distinction can be seen visually at the line of established vegetation that backs the shoreline.

The Division of State Lands (DSL) has co-authority with the OPRD over rocky intertidal areas. The DSL manages the state-owned seabed within three nautical miles of low tide at the ocean shore. Specifically, the DSL regulates removal and filling of seabed and estuaries, including any dredged materials or seabed minerals. DSL may also issue leases for the harvest of Bull Kelp, a large seaweed in rocky areas of Oregon's coast. The Beach Bill requires that a permit be obtained from the OPRD for all "beach improvements" west of a surveyed beach zone line. Communities can check their comprehensive plan or contact OPRD to obtain the location of this surveyed line.

The Removal/Fill Law and implementing regulations (ORS 196.800 – 196.990) contain specific standards and requirements for riprap and other bank and shore stabilization projects in areas that extend from the Pacific Ocean shore to the line of established upland vegetation or the highest measured tide, whichever is greater. OPRD administers the removal/fill regulations jointly with the Ocean Shore Permit Authority. Activities permitted under these regulations are required to comply with the Statewide Planning Goals and be compatible with corresponding provisions of local comprehensive plans. Permits for shoreline protective structures may be issued only when development existed prior to January 1, 1977, as required under Goal 18. Foredune management plans, often implemented as hazard mitigation strategies, require a permit from OPRD because these strategies affect the structure of the shoreline. Other hazard mitigation strategies that require OPRD approval include: natural product (dirt) removal, re-sloping of a vertical bank below the statutory line of vegetation, and mitigating for erosion by altering the course of a stream that flows into the ocean.

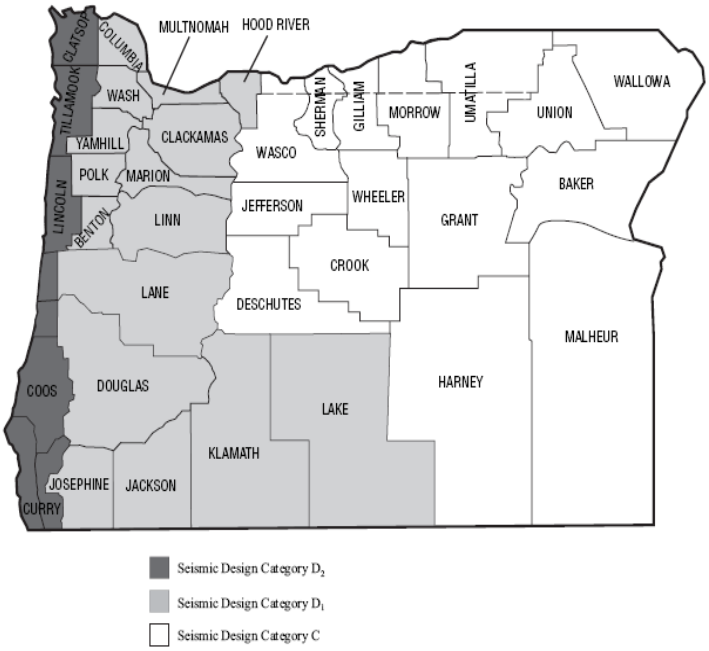


Figure 4.D.1: Oregon's Seismic Design Regions

Oregon Building Codes

The 2010 Oregon Structural Specialty Code and the 2008 Oregon Residential Specialty Code contain requirements for all new construction of buildings, structures, and portions of buildings and structures within flood hazard areas, including substantial improvement and restoration of substantial damage to buildings and structures. For example, the lowest floors of buildings and structures must be elevated at least one foot above the design flood elevation. Flood hazard areas are determined by flood hazard maps that include, at minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency.

Coastal areas that are subject to wave heights in excess of three feet or subject to high-velocity wave action or wave-induced erosion are designated as high-hazard areas. Buildings and structures constructed in whole or in part in coastal high-hazard areas must be designated and constructed in accordance with building code requirements.

Earthquake / Tsunamis

Tsunamis – ORS 336.071, ORS 455.446, and ORS 455.448

Fourteen earthquake-related bills were introduced during the 1995 session. Several passed, including a new requirement for earthquake education and tsunami drills to be conducted in public schools (ORS 336.071), a requirement for essential and special-occupancy structures to be built outside of tsunami inundation zones (ORS 455.446), provisions for the inspection and entrance of buildings damaged by earthquakes (ORS 455.448) and specific provisions for the abatement of buildings damaged by earthquakes. Senate Bill 1057 created a task force to evaluate the risks impacting existing buildings and make recommendations to the 1997 legislature.

Oregon Building Codes

The 2008 Oregon Residential Specialty Code addresses seismic concerns by breaking the state up into the following zones. The code contains specific regulations for development within each zone.

Unlike the Oregon Residential Specialty Code which assigns seismic categories, the Structural Specialty Code relies on a "seismic design load." The seismic design load is determined in accordance with an engineering calculation factoring:

- Peak ground acceleration of the site;
- Use of the building; and
- Soil conditions.

Senate Bill 96 (1991): Seismic Hazard Investigation

The legislature passed Senate Bill 96 in 1991. This law requires site-specific seismic hazard investigations before the construction of essential facilities, hazardous facilities, major structures, and special-occupancy structures (e.g., hospitals, schools, utilities and public works, police and fire stations). These requirements are adopted into the State Building Code. The law also provides for the installation of strong-motion sensors in selected major buildings and

mandates that school officials in all public schools lead students and staff in earthquake drills.

SENATE BILL 13 (2001): SEISMIC EVENT PREPARATION

Senate Bill 13, signed by the Governor on June 14, 2001, requires each state and local agency and persons employing 250 or more full-time employees to develop seismic preparation procedures and inform their employees about the procedures. Further, the bill requires agencies to conduct drills in accordance with Oregon Emergency Management guidelines. These drills must include "familiarization with routes and methods of exiting the building and methods of duck, cover and hold during an earthquake."

SENATE BILL 14 (2001): SEISMIC SURVEYS FOR SCHOOL BUILDINGS

The Governor signed Senate Bill 14 on July 19, 2001. The bill required the State Board of Higher Education to conduct seismic safety surveys of buildings that have a capacity of 250 or more persons and are routinely used for student activities by public institutions or departments under the control of the board. A seismic safety survey was not required for buildings that had previously undergone seismic safety surveys, or that had been constructed to meet state building code standards. For buildings that were found to pose an undue risk to life and safety during a seismic event, the bill required the State Board of Higher Education to develop plans for seismic rehabilitation or seismic risk reduction. Subject to available funding, all seismic rehabilitation or risk reduction activities must be completed before January 1, 2032.

SENATE BILL 15 (2001): SEISMIC SURVEYS FOR HOSPITAL BUILDINGS

The Governor signed Senate Bill 15 on July 19, 2001. The bill required the Health Division to conduct seismic safety surveys of hospital buildings that contain acute inpatient care facilities. Subject to available funding, seismic surveys must also be conducted on fire stations, police stations, sheriffs' offices, and similar facilities. The surveys were completed in January, 2007.

A seismic survey was not required for buildings that had previously undergone seismic safety surveys, or that had been constructed to meet state building code standards. For buildings that were found to pose an undue risk to life and safety during a seismic event, the bill required building occupants to develop plans for seismic rehabilitation or seismic risk reduction. Subject to available funding, all seismic rehabilitation or risk reduction activities must be completed before January 1, 2022.

OREGON SEISMIC SAFETY POLICY ADVISORY COMMISSION (OSSPAC) – ORS 401.337 TO 401.353

The Oregon Seismic Safety Policy Advisory Commission (OSSPAC), otherwise known as the Earthquake Commission, is a state advisory commission that was created in February 1990 through an executive order from Governor Neil Goldschmidt. The group is comprised of 18 individuals who represent a variety of interests concerned with the formulation of public policy regarding earthquakes. It is made up of six representatives of government, six representatives of the public interest, and six representatives of industries and

stakeholders. This variety of interests helps direct the goals of the Commission for the benefit of all Oregon citizens.

The Earthquake Commission has the unique task of promoting earthquake awareness and preparedness through education, research, and legislation. OSSPAC seeks to positively influence decisions and policies regarding pre-disaster mitigation of earthquake and tsunami hazards, and to increase public understanding of hazards, risk, exposure, and vulnerability. In order to fulfill the goals of the commission, OSSPAC members have developed five primary objectives. These objectives are to increase or improve:

- Earthquake awareness, education, and preparedness;
- Earthquake risk information;
- The earthquake safety of buildings and lifelines;
- Geoscience and technical information; and
- Emergency pre-disaster planning, response and recovery efforts.

For information on OSSPAC, contact Oregon Emergency Management.

Senate Bill 2 (2005): Statewide Seismic Needs Assessment Using Rapid Visual Screening

Oregon Senate Bill 2 directed DOGAMI, in consultation with project partners, to develop a statewide seismic needs assessment that includes seismic safety surveys of K-12 public school buildings and community college buildings that have a capacity of 250 or more persons, hospital buildings with acute inpatient care facilities, fire stations, police stations, sheriffs' offices and other law enforcement agency buildings.

The statewide needs assessment consisted of rapid visual screenings (RVS) of these buildings; information gathering to supplement RVS; and ranking of RVS results into risk categories. The results are posted on DOGAMI's website.

Senate Bill 2 (2005) provided the first step in a pre-disaster mitigation strategy that is further defined in Senate Bills 3-5 (2005).

Senate Bill 3 (2005): Statewide Earthquake Rehabilitation Grant Program

The Oregon Office of Emergency Management (OEM) administers the Seismic Rehabilitation Grant Program (SRGP). The SRGP is a competitive grant program that provides state funds on a reimbursable basis for seismic rehabilitation of critical public buildings, which include hospital buildings with acute inpatient care facilities, fire stations, police stations, sheriffs' offices, and other facilities used by state, county, or district municipal law enforcement agencies. In addition, eligible school buildings must have a capacity of 250 or more persons that are routinely used for student activities by K-12 public schools, community colleges, education service districts (ESDs), and higher education institutions, and they must be owned by the State Board of Higher Education, a school district, an education service district, a community college district, or a community college service district.

The SRGP program is subject to the availability of funding, as well as any directive or restriction made with respect to such funds. SRGP grants are awarded on a competitive basis, and the maximum grant award is $1.5 million.

Program Goal: To provide mitigation of seismic risks that present a threat to the lives and property of public schools and emergency services facilities and to leverage other funding sources for seismic mitigation.

Oregon is at risk from three different types of earthquakes: Cascadia Subduction Zone earthquakes; intraplate earthquakes like the 2001 Nisqually earthquake (that occur deep in the subduction zone); and crustal earthquakes like the ones that struck Scotts Mills and Klamath Falls in 1993. Over time, Oregon has become more aware of existing seismic risks resulting in more proactive planning, preparation and implementing mitigation for such natural hazard risks. Along with the scientific evidence, increased awareness and legislative actions, the state initiated the development and implementation of program activities that provide grant funds for seismic rehabilitation of critical public buildings.

The state-funded Seismic Rehabilitation Grant Program (SRGP) provides a resource tool for implementing seismic rehabilitation projects that benefit Oregon's public schools and emergency services facilities and compliments existing programs such as FEMA's Hazard Mitigation Assistance grants.

During the 2005 Oregon Legislative Session, Senate Bills 2 through 5, approved by the Legislative Assembly, provided the methodology and direction to implement the SRGP. Senate Bill 2 required the Oregon Department of Geology and Mineral Industries (DOGAMI) to complete a statewide seismic needs assessment. This assessment of school buildings and public safety facilities included a rapid visual screenings of such buildings and a ranking of these screenings based on need and seismic risk. This assessment was completed in June 2007. Senate Bill 3 provided authority to the Director of Oregon Emergency Management (OEM) to develop and implement a grant program for seismic rehabilitation of certain critical public buildings. These buildings include hospital buildings with acute inpatient care facilities, fire stations, police stations, sheriffs' offices, other facilities used by state, county, district municipal law enforcement agencies, and buildings with a capacity of 250 or more persons routinely used for student activities by K-12 public schools, community colleges, education service districts, and higher education institutions. Senate Bills 4 and 5 authorize the issuance of general obligation state bonds that provide the funding mechanism to implement the ballot measures for the seismic rehabilitation of schools and emergency services buildings. During the 2009 Legislative Session, the Legislative Assembly approved $30 million of General Obligation bonds for Seismic Rehabilitation. The 2011 Legislative Session approved $7.5 million of General Obligation bonds for Seismic Rehabilitation.

OEM began development of the SRGP program and brought forward many items to consider. A few of those items included; having a simplified application process, no matching funds requirement, and a benefit cost analysis tool that utilizes both the DOGAMI Rapid Visual Screening (RVS) building assessment data and FEMA's Version 3.x BCA Toolkit to determine project prioritization.

Even before funding was approved by the state legislature, OEM conducted an informal survey to critical public building representatives and feedback reinforced the need for seismic rehabilitation funds. The survey found that:

Interest in Seismic Rehabilitation Program (of those responding)

89% of K-12 school districts interested in applying for grant funds.
65% of Community Colleges interested in applying for grant funds.
64% of Police Departments interested in applying for grant funds.
91% of Fire Departments interested in applying for grant funds.

Number of Buildings identified as candidates for seismic rehabilitation grants.

K-12 school Buildings	300
Community Colleges Buildings	45
Fire Departments	119
Police Departments	5

Costs of projects identified on the survey that would apply for grant funding:

Community Colleges	$72, 401,722
Police Departments	$18,480,000
Fire Stations	$28,195,088
Total	$119,076,810

Table 4.D.1: SRGP Awarded Projects, 2009-2010

Schools		
Entity	**Project**	**Amount Awarded**
Linn Benton Community College	Science Technology Building	$565,016
Three Rivers School District	Applegate School	$826,018
Beaverton School District	Elmonica Elementary School	$200,200
Beaverton School District	Cooper Mountain Elementary School	$162,640
Beaverton School District	McKay Elementary School	$320,035
Beaverton School District	Oak Hills Elementary School	$120,600
Western Oregon University	Todd Hall	$1,190,895
Lake County School District	Lakeview High School	$589,700
Lake County School District	Fremont Elementary School	$398,100
Medford School District	Washington Elementary School	$271,000
Medford School District	Medford Opportunity High School	$200,926
David Douglas School District	Floyd Light Middle School	$1,489,766
Yamhill Carlton School District	Yamhill Carlton Intermediate School	$76,500
North Clackamas School District	Milwaukie Elementary School	$1,088,604
	Sub-Total	*$7,500,000*
Emergency Services		
Entity	**Project**	**Amount Awarded**
Tuality Healthcare	Tuality Hospital, Building A	$1,380,480
City of Dallas Fire Department	Dallas Fire Station	$887,725
City of Albany Fire Department	Station 12	$280,023
City of Gresham Fire & Emergency Services	Stations 71 (Public Safety Building) & 72	$273,866
Netarts Oceanside Fire District	Station 61	$170,000
City of St. Helens Police Department	St. Helens Police Station	$20,000
Klamath County Fire District No. 1	Station 6	$1,311,704
City of Eugene	Danebo Fire Station Number 8	$66,739
Silverton Fire District	Scotts Mills Station	$131,207
Oregon Health & Science University	University Hospital South	$1,478,256
City of Coos Bay	Coos Bay City Hall	$1,500,000
	Sub-Total	*$7,500,000*
	GRAND TOTAL	**$15,000,000**

Source: OEM

Table 4.D.2: SRGP Awarded Projects, 2010-2011

Schools		
Entity	**Project**	**Amount Awarded**
Greater Albany Public Schools	Central Elementary School	$1,500,000
Klamath Falls City Schools	Mills Elementary School Auditorium	$1,495,212
Tigard-Tualatin School District	Twality Middle School	$835,750
	Sub-Total	*$3,830,962*
Emergency Services		
Entity	**Project**	**Amount Awarded**
Langlois RFPD	Langlois Fire Station	$249,894
City of Garibaldi	Garibaldi Fire Station	$270,000
City of Grants Pass	Hillcrest Public Safety Building	$477,024
City of Astoria	Public Safety Building	$1,500,000
Santa Clara Fire District	Station 1	$570,000
City of Hood River	Hood River Fire Department	$291,225
Woodburn RFPD	Station 22	$310,895
	Sub-total	*$3,669,038*
	GRAND TOTAL	**$7,500,000**

Source: OEM

Table 4.D.3: SRGP Conditionally Awarded Projects, 2011-2012

Schools		
Entity	**Project**	**Amount Awarded**
Portland Public Schools	Alameda Elementary School	$1,500,000
Lake County School District	Daly Middle School	$1,151,700
Rogue River School District	Rogue River Elementary School	$1,472,221
Lane Community College	Building 11	$667,500
Myrtle Point School District	Myrtle Point High School	$1,470,939
Philomath School District	Philomath Middle School	$268,350
Hillsboro School District	North Plains Elementary School	$585,363
Springfield Public Schools	Walterville Elementary School	$249,822
	GRAND TOTAL	**$7,365,895**

Source: OEM

As of this state mitigation plan update, the following SRGP-funded projects are completed:

- Linn Benton Community College – Science Technology Building
- Beaverton School District – Elmonica ES, Cooper Mountain ES, McKay ES, Oak Hills ES
- City of St. Helens Police Department
- City of Eugene – Station 8

SENATE BILLS 4 AND 5 (2005): STATE BOND AUTHORIZATION

Senate Bills 4 (2005) and 5 (2005) direct the state treasurer to issue voter approved bonds for the seismic rehabilitation of public education buildings and emergency service buildings.

Funding provided by a FEMA Pre-Disaster Mitigation competitive grant for the seismic rehabilitation of three university facilities (two dormitories at Portland State University and operations/administration building at the Oregon Institute for Technology) helped lay the foundation for this successful legislative action. The PSU seismic rehabilitation projects showed that the state could successfully leverage funding, program management, technical assistance and university-managed implementation to complete the projects within the grant budget and on schedule.

Fire (Wildfire and Wildland-Urban Interface)

Oregon Building Codes

The 2008 Oregon Residential Specialty Code provides minimum standards for dwellings and their accessory structures located in or adjacent to vegetated areas subject to wildfires, to reduce or eliminate hazards presented by such wildfires. Wildfire zones are determined using criteria established by the Oregon Department of Forestry.

Oregon Forestland-Urban Interface Fire Protection Act (SB 360)

The Oregon Forestland-Urban Interface Fire Protection Act, often referred to as Senate Bill 360, enlists the aid of property owners toward the goal of turning fire-vulnerable urban and suburban properties into less-volatile zones where firefighters may more safely and effectively defend homes from wildfires. Senate Bill 360 established Oregon's first comprehensive statewide policy regarding mitigation in wildland-urban interface areas. It broadly defined the WUI and set in place a process to identify and classify these areas. The legislation also required the development of standards, which WUI owners are to apply in order to manage and minimize wildfire hazards on their property. When work to implement Senate Bill 360 begins in a county, a committee of local representatives formally identifies and classifies WUI areas. Individual property owners in these areas are then contacted and informed of the standards they are required to meet. They have up to two years to bring their property into compliance with the standards and then to certify that they have done so. Owners who fail to certify become subject to a potential liability of up to $100,000 for certain costs of suppressing fires which start on their property.

The Oregon Forestland-Urban Interface Fire Protection Act is fully described in Oregon Revised Statutes 477.015 through 477.061, and Oregon Administrative Rules 629-044-1000 through 629-044-1110

Oregon Revised Statute 215.730: Additional Criteria for Forestland Dwellings

ORS 215.730 (County Planning; Zoning, Housing Codes) pro-vides additional criteria for approving dwellings located on lands zoned for forest and mixed agriculture/forest use. Under its provisions, county governments must require, as a condition of approval, that single-family dwellings on lands zoned forestland meet the following requirements:

1. Dwelling has a fire retardant roof;

2. Dwelling will not be sited on a slope of greater than 40 percent;
3. Evidence is provided that the domestic water supply is from a source authorized by the Water Resources Department and not from a Class II stream as designated by the State Board of Forestry;
4. Dwelling is located upon a parcel within a fire protection district or is provided with residential fire protection by contract;
5. If dwelling is not within a fire protection district, the applicant provides evidence that the applicant has asked to be included in the nearest such district;
6. If dwelling has a chimney or chimneys, each chimney has a spark arrester; and
7. Dwelling owner provides and maintains a primary fuel-free break and secondary break areas on land surrounding the dwelling that is owned or controlled by the owner. If a governing body determines that meeting the fourth requirement is impractical, local officials can approve an alternative means for protecting the dwelling from fire hazards.

This can include a fire sprinkling system, on-site equipment and water storage, or other methods that are reasonable, given the site conditions. If a water supply is required under this subsection, it must be a swimming pool, pond, lake or similar body of water that at all times contains at least 4,000 gallons or a stream that has a minimum flow of at least one cubic foot per second. Road access must be provided to within 15 feet of the water's edge for fire-fighting pumping units, and the road access must accommodate a turnaround for fire-fighting equipment.

Oregon Revised Statute 477.015-061 Urban Interface Fire Protection

These provisions were established through efforts of the Oregon Department of Forestry, the Office of the State Fire Marshal, fire service agencies from across the state, and the Commissioners of Deschutes, Jefferson, and Jackson Counties. It is innovative legislation designed to address the expanding interface wildfire problem within Oregon Department of Forestry Fire Protection Districts. Full implementation of the statute will occur on or after January 1, 2002. The statute does the following:

1. Directs the State Forester to establish a system of classifying forestland-urban interface areas;
2. Defines forestland-urban interface areas;
3. Provides education to property owners about fire hazards in forestland-urban interface areas. Allows for a forestland-urban interface county committee to establish classification standards;
4. Requires maps identifying classified areas to be made public;
5. Requires public hearings and mailings to affected property owners on proposed classifications;
6. Allows property owners appeal rights;
7. Directs the Board of Forestry to promulgate rules that set minimum acceptable standards to minimize and mitigate fire hazards within forestland-urban interface areas; and

8. Creates a certification system for property owners meeting acceptable standards. Establishes a $100,000 liability limit for cost of suppressing fires, if certification requirements are not met.

Oregon Revised Statute Chapter 478: Rural Fire Protection Districts

ORS 478, Rural Fire Protection Districts, includes the following provisions, among others, related to wildfire hazard mitigation:

478.120 Inclusion of forestland in district. The authority to include forestland within a rural fire protection district pursuant to ORS 478.010 (2)(c) applies to forestland within the exterior boundaries of an existing district and to forestland on which structures subject to damage by fire have been added after July 20, 1973.

478.140 Procedure for adding land to district by consent of owner. Any owner consenting to add the forestland of the owner to the district under ORS 478.010 (2)(c) shall do so on forms supplied by the Department of Revenue. The owner shall file the original with the district. The district shall forward a copy to the assessor of each county in which the land is located, within 20 days of receipt.

478.910 Adoption of fire prevention code. A district board may, in accordance with ORS 198.510 to 198.600, adopt a fire prevention code.

478.920 Scope of fire prevention code. The fire prevention code may provide reasonable regulations relating to:

1. Prevention and suppression of fires.
2. Mobile fire apparatus means of approach to buildings and structures.
3. Providing fire-fighting water supplies and fire detection and suppression apparatus adequate for the protection of buildings and structures.
4. Storage and use of combustibles and explosives.
5. Construction, maintenance and regulation of fire escapes.
6. Means and adequacy of exit in case of fires and the regulation and maintenance of fire and life safety features in factories, asylums, hospitals, churches, schools, halls, theaters, amphitheaters, all buildings, except private residences, which are occupied for sleeping purposes, and all other places where large numbers of persons work, live, or congregate from time to time for any purpose.
7. Requiring the issuance of permits by the fire chief of the district before burning trash or waste materials.
8. Providing for the inspection of premises by officers designated by the board of directors, and requiring the removal of fire hazards found on premises at such inspections.

478.927 Building permit review for fire prevention code. A district adopting a fire prevention code shall provide plan review at the agency of the city or county responsible for the issuance of building permits for the orderly administration of that portion of the fire prevention code that requires approval prior to the issuance of building permits.

Additional Criteria for Forestland Dwellings

ORS 215.730 (County Planning; Zoning, Housing Codes) provides additional criteria for approved dwellings located on lands zoned for forest and mixed agriculture/forest use. Under its provisions, county governments must require, as a condition of approval, that single-family dwellings on lands zoned forestland meet the following requirements:

1. Dwelling has a fire retardant roof;
2. Dwelling will not be sited on a slope of greater than 40 percent;
3. Evidence is provided that the domestic water supply is from a source authorized by the Water Resources Department and not from a Class II stream as designated by the State Board of Forestry;
4. Dwelling is located upon a parcel within a fire protection district or is provided with residential fire protection by contract;
5. If dwelling is not within a fire protection district, the applicant provides evidence that the applicant has asked to be included in the nearest such district;
6. If dwelling has a chimney or chimneys, each chimney has a spark arrester; and
7. Dwelling owner provides and maintains a primary fuel-free break and secondary break areas on land surrounding the dwelling that is owned or controlled by the owner. If a governing body determines that meeting the fourth requirement is impractical, local officials can approve an alternative means for protecting the dwelling from fire hazards.

This can include a fire sprinkling system, on-site equipment and water storage, or other methods that are reasonable, given the site conditions. If a water supply is required under this subsection, it must be a swimming pool, pond, lake or similar body of water that at all times contains at least 4,000 gallons or a stream that has a minimum flow of at least one cubic foot per second. Road access must be provided to within 15 feet of the water's edge for fire-fighting pumping units, and the road access must accommodate a turnaround for fire-fighting equipment.

Flood

Statewide Land Use Planning Goals Related to Natural Hazards

Goal 15: Willamette River Greenway

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

Oregon Building Codes

The 2010 Oregon Structural Specialty Code and the 2008 Oregon Residential Specialty Code contain requirements for all new construction of buildings, structures, and portions of buildings and structures within flood hazard areas, including substantial improvement and restoration of substantial damage to buildings and structures. For example, the lowest floors of buildings and structures must be elevated at least one foot above the design flood elevation. Flood hazard areas are determined by flood hazard maps that include, at

minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency.

Coastal areas that are subject to wave heights in excess of three feet or subject to high-velocity wave action or wave-induced erosion are designated as high-hazard areas. Buildings and structures constructed in whole or in part in coastal high-hazard areas must be designated and constructed in accordance with building code requirements.

Oregon's Wetlands Protection Program

Oregon's Wetlands Program was created in 1989 to integrate federal and state rules concerning wetlands protection with the Oregon Land Use Planning Program. The Wetlands Program has a mandate to work closely with local governments and the Division of State Lands (DSL) to improve land use planning approaches to wetlands conservation. A Local Wetlands Inventory (LWI) is one component of that program. DSL also develops technical manuals, conducts wetlands workshops for planners, provides grant funds for wetlands planning, and works directly with local governments on wetlands planning tasks.

The Oregon Plan for Salmon and Watersheds

"The Oregon Plan" is the state's program to restore native salmon and trout populations and to improve water quality. The overall goal of the Oregon Plan is to restore fish populations to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits.

Division of State Lands Fill and Removal Permit Program (ORS 196.800-990)

Statewide Land Use Planning Goal 5 requires local governments to adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. In implementing this goal, Division of State Lands (DSL) Fill and Removal Permit Program (ORS 196.800-990) requires individuals who remove or fill 50 cubic yards or more in "waters of the state" to obtain a permit from the DSL. In State Scenic Waterways or areas designated by DSL as essential indigenous anadromous salmonid habitat, most removal-fill activities require a permit, regardless of the number of cubic yards affected. In addition, the Oregon Department of Environmental Quality is responsible for water quality certification under section 401(a) of the Clear Water Act. This certification is required as part of the DSL permitting process.

Landslide

Oregon Building Codes

The 2010 Oregon Structural Specialty Code and the 2008 Oregon Residential Specialty Code contain provisions for lot grading and site preparation for the construction of building foundations. Both codes contain requirements for cut, fill and sloping of the lot in relationship to the location of the foundation. There are also building setback requirements from the top and bottom of slopes. The codes specify foundation design requirements to accommodate the type of soils, the soil bearing pressure, and compaction and lateral loads from soil and groundwater on sloped lots.

Senate Bill 12: Rapidly Moving Landslides

Following the flood and landslide events of 1996, legislation was drafted to reduce risk from future landslide hazards. The legislature passed Senate Bill 1211 in 1997, which dealt with rapidly moving landslide issues around steep forestlands, and not in typical urban or community settings. Senate Bill 1211 granted authority to the State Forester to prohibit forest operations in certain landslide-prone locations, and created the Interim Task Force on Landslides and Public Safety. SB 1211 charged the Interim Task Force with developing a comprehensive, practicable, and equitable solution to the problem of risks associated with landslides.

The Interim Task Force developed the legislative concept that resulted in Senate Bill 12 in the 1999 session (ORS 195.250 et seq.). Senate Bill 12 directs state and local governments to protect people from rapidly moving landslides. The bill has three major components affecting local governments: detailed mapping of areas potentially prone to debris flows (i.e., "further review area maps"); local government regulating authority; and funding for a model ordinance. The legislature allocated funding to the Department of Geology and Mineral Industries (DOGAMI) to prepare the "further review area maps," and provided $50,000 for a grant to a local government to develop a model program to address rapidly moving landslides. Senate Bill 12 applies only to rapidly moving landslides, which are uncommon in many communities, but are very dangerous in areas where they do occur.

Windstorm

Oregon Building Codes

The 2008 Oregon Residential Specialty Code and the 2010 Oregon Structural Specialty Code provide design criteria for buildings and construction within 'exposure classification' areas of the state. Within Oregon, there are three exposure categories. All areas with full exposure to ocean winds, for example, must be designed to accommodate 110 mph winds. Design criteria include requirements related to protection of openings, and building height and wind load.

State Post- Disaster Hazard Management Policies

Following the Presidential Disaster Declaration for the December 2007 winter storm event, the Governor signed Executive Order 08-20 establishing the Governor's Emergency Recovery Framework. The Order established a Recovery Planning Cell to direct emergency recovery in Oregon during times of significant crisis. The Order also established the Governor's Recovery Cabinet to coordinate the next phase of ongoing recovery efforts, after the initial response phase is complete.

Substantial Damage

A building is considered to be substantially damaged when the total cost of repair equals or exceeds 50% of the pre-damage market value of the structure. For flood hazard mitigation, substantial damage determination provides opportunities for mitigation of buildings through acquisition (to include demolition), relocation out of the floodplain and, potentially, elevation. In fact, when a building is substantially damaged (whether by flooding or other catastrophe) or substantially improved and said building is in a Special Flood Hazard Area (SFHA), NFIP regulations require mitigation be applied to meet the local community's current floodplain development regulations. Immediately after a flood, local officials should tour the floodplain and note damaged areas on a community map and develop a database of properties that flooded. Where the flooding was deep and with potentially high velocity (the mapped floodway, for example) it will become evident that damages to buildings will reach and exceed the 50% threshold. For those properties that have NFIP flood insurance, timely determinations of substantial damage will assist property owners in considering mitigation alternatives so that they can apply for an Increased Costs of Compliance (ICC) mitigation claim. If approved for ICC, the ICC claim can be used to expedite mitigation implementation. In the post-disaster environment, particularly when such events are declared major disasters, the state, local governments and FEMA work closely together during Joint Field Office Operations to facilitate substantial damage determinations and identify early mitigation opportunities for buildings. Structures that are substantially damaged in the SHFA have been given top priority in the past when considering what structures to acquire. In some instances, the benefit/cost analysis can be waived as FEMA grant program requirement when a building is substantially damaged. Timely substantial damage determination is a standard protocol for all flood disaster declarations in Oregon.

State Pre- and Post- Disaster Hazard Management Programs and Capabilities

In addition to the policies listed above, the following are examples of how mitigation has been integrated into other state/regional planning initiatives. Despite these activities, there is little state funding available for the implementation of on-the-ground mitigation strategies.

Agencies/Organizations

STATE INTERAGENCY HAZARD MITIGATION TEAM

First convened by Governor Kitzhaber in 1997, the State Interagency Hazard Mitigation Team (IHMT) meets quarterly, and provides leadership in addressing natural hazards mitigation in Oregon. The State IHMT is an important state mechanism for interagency coordination. The team's focus is to understand losses arising from natural hazards, including secondary losses that occur when natural hazard events impact technological systems and critical infrastructure, and to coordinate recommended strategies to mitigate loss of life, property, economic and natural resources by maintaining the FEMA-approved and Governor-adopted *Oregon Natural Hazards Mitigation Plan*.

The State IHMT's goals are:

1. Coordinate hazard mitigation programs and activities at all levels in the state of Oregon.
2. Describe and evaluate the natural hazards to which the state of Oregon is vulnerable.
3. Describe and evaluate state, local government, and private sector hazard mitigation policies, programs, and capabilities, consistent with federal codes and regulations.*
4. Identify sources of hazard mitigation funding and the procedures that must be followed to obtain such funding; make this information widely available.*
5. Identify and evaluate proposed hazard mitigation strategies, projects, and legislation to ensure consistency and to proactively integrate natural resource goals into mitigation activities.
6. Continue to develop, implement, monitor, evaluate, and update the Oregon Natural Hazards Mitigation Plan.
7. Provide education and information about natural hazards and steps which can be taken to mitigate against their effects.*
8. Facilitate integration of hazard mitigation into the activities and programs of state and local government agencies, and to the extent practical, into the activities of private sector organizations.
9. Strive to integrate into natural hazard mitigation: natural resource protection and restoration, stormwater management, ecosystem concerns, floodplain management, and protection of water quality for public use.
10. Promote and facilitate the concept of a disaster resistant economy in Oregon.

*Note: a product of goals #3, #4, and #7 is the publication and distribution of hazard mitigation resource information which includes both state and federal programs, and publication of case studies which show the successful implementation of various mitigation activities. Many of these resources are available through the Oregon Partnership for Disaster Resilience's website: http://csc.uoregon.edu/opdr .

OEM has a leadership role in convening and chairing the IHMT meetings as well as providing overall staff support through routine communication with the membership, agenda development, and meeting logistics. Subcommittees of the IHMT are responsible for developing the hazard-specific chapters to this plan. Members of the State IHMT are called upon to assist with various mitigation activities outside of the scheduled State IHMT meetings to include such things as project identification and review, particularly following major disaster declarations.

State IHMT meetings are open to the public. Liaison representatives from non-State IHMT agencies and organizations can be added as needed. Descriptions of the state IHMT agencies' hazard mitigation roles, responsibilities, and authorities are provided below.

Table 4.D.4. IHMT Agencies' Hazard Mitigation Roles, Responsibilities and Authorities

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Department of Administrative Services (DAS), Risk Management Division http://risk.das.state.or.us	Works to prepare state government offices for emergency evacuation planning using the State of Oregon's *Sound the Alarm RisKey* guide. DAS works to improve safety among the workplace by identifying risks and developing tools to manage risks. DAS provides central services when it makes sense or is mandated to do so. DAS also works to protect state owned property and buildings, and sets standards for leasing and constructing state buildings. DAS is not currently an active participant in the state IHMT.	No legal authority for natural hazards mitigation, except that which may arise from a claim under self-insurance property coverage.
Oregon Department of Agriculture (ODA) http://www.oregon.gov/ODA/	Works to exclude or eradicate certain insect pests from becoming established in the state. Using the insect Pest Prevention and Management program (IPPM), the ODA works to protect Oregon's agriculture, horticulture and timber resources from damaging insect pests, thus preventing the defoliation of vast acreage of trees and reducing fire and erosion hazards; works with soil and water conservation districts to help landowners implement best management practices to reduce erosion, thereby preventing slides, floods, and erosion-related problems; actively involved in watershed health and maintaining natural resources through education, technical assistance, and regulatory programs for landowners.	ORS, Chapter 568 provides authority for water quality and soil conservation measures, and Chapter 570 provides authority for pest and disease control programs.
Department of Consumer and Business Services (DCBS), Building Codes Division (BCD) www.cbs.state.or.us/external/bcd	Works to implement statewide building codes through a permitting program. BCD building codes have adopted construction standards that help create disaster resistant buildings. BCD administers the post-earthquake inspection program for damaged buildings and provides technical assistance and training for building inspectors, plans examiners, designers and contractors. A post-earthquake inspector carries out post-earthquake habitability assessments for all structures affected by an earthquake. BCD has compiled an active list of certified post-earthquake inspectors. BCD generally adopts nationally recognized model codes that include various standards to ensure building safety. Technical assistance is provided to designers, contractors, building officials, and the public through its code specialists, its web page, regular mailings to interested parties and local building officials, and its quarterly publication *Codelink*.	ORS, Chapter 455 provides legal authority for the Building Codes Division's (BCD) natural hazard mitigation activities including 455.020 (code adoption), .725 (training), .440 (site soil analysis), .446 (construction in tsunami zones), .447 (seismic site hazard analysis), and .448-.449 (entry and inspection of earthquake damaged buildings).
DCBS - Insurance Division www.cbs.state.or.us/external/ins	Works to perform a major balancing role, protecting the public's interests through ensuring the financial soundness of insurers, the availability and affordability of insurance and the fair treatment of policyholders and claimants while maintaining a positive business climate. The CDBS Insurance Division helps home and business owners prepare for natural hazards through the provision of insurance-related educational material. The BCDS Insurance Division also works to help ensure insurance compensation to insurance holders in the wake of a natural disaster.	ORS Chapter 731 provides authority to DCBS insurance division. House Bill 3605 allows the director of the Department of Consumer and Business Services (DCBS) to modify insurance policy terms in times of emergency.

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Oregon Business Development Department (OBDD) http://www.oregon.gov/OBDD/index.shtml	Works with the Governor and all state agencies to prioritize programs and modify services that help those affected by natural disasters. OBDD works with current loan customers to address needs during recovery from a natural disaster. OBDD works with communities to prioritize infrastructure needs resulting from a natural disaster, which is used to develop state and federal funding solutions for Oregon communities. OBDD offers Emergency Response Funding Programs. OBDD resources also support hazard mitigation by promoting development of new facilities and infrastructure in appropriate locations. OBDD is not currently an active participant in the state IHMT.	ORS Chapter 285A-C provides authority to the OECDD, including 285B.020 (infrastructure).
Department of Environmental Quality (DEQ) http://www.oregon.gov/DEQ/	Works to protect and maintain waters of the state for public health and safety as well as for all future beneficial uses under EPA delegated programs from the Clean Water Act and Safe Drinking Water Act. Emergency actions related to natural hazards must meet environmental protection requirements. If a natural hazard were to result in hazardous materials being released into the environment, DEQ's Emergency Response Program is designed to respond. DEQ's Environmental Cleanup Division takes action should a release occur or the threat of a release. DEQ assists OEM, DLCD, and FEMA in conducting environmental assessments related to watershed restoration, hazard mitigation projects, and provides matching grants for projects under the Clean Water Act. DEQ plays a central role in the disposal of disaster debris. DEQ also works with Oregon Natural Events Action Plan for Wildfire Smoke. DEQ offers the Wildfire Air Quality Rating to monitor air pollution throughout the state to ensure that air quality standards are being met.	ORS, Chapter 468, water pollution control, enables DEQ to protect all future beneficial uses of waters of the state (surface and groundwater), and allows DEQ to act should there be a threat of release or a spill. ORS, Chapter 468a, enables the DEQ to regulate and monitor air quality. ORS, Chapters 465 and 466 enables the DEQ to respond to hazardous waste and materials that have been released into the environment.
Oregon Department of Fish and Wildlife (ODFW) www.dfw.state.or.us	Has a primary role in determining the effects of potential hazard mitigation projects on fish and wildlife habitats and recommending measures that enhance or at least do not degrade such habitats; administers the state's Riparian Tax Incentive Program and Restoration and Enhancement Program, and can provide cost-share funding, grants and technical assistance.	ORS, Chapter 496 (application, administration and enforcement of wildlife laws), Chapter 497 (licenses and permits), Chapter 498 (hunting, angling and trapping) and Chapter 501 (refuges and closures).

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Oregon Department of Forestry (ODF) http://www.oregon.gov/ODF/	Works to protect communities from wildfires through the implementation of the Communities at Risk Assessment Program. ODF Identifies communities and assigns each a low, moderate, or high risk rating for the following categories: risk, hazard, protection, capability, value, and overall. ODF works with communities to create Community Wildfire Protection Plans (CWPP): a process involving collaboration between communities and agencies interested in reducing wildfire risk. ODF is responsible for all aspects of wildland fire protection on private, state and BLM forestlands. ODF administers regulations, including landslide mitigation, on non-federal lands. ODF does all of the following things which advance natural hazards mitigation: requiring landowners to control fires on their lands, controlling fires that other landowners cannot control, administering the industrial fire prevention program, investigating wildfires, administering the Forest Practices Act, coordinating with other agencies, maintaining technical expertise on wildfire sciences, geosciences, and hydrology, completing debris flow hazard mapping for Western Oregon, and leading many aspects of the *Oregon Plan for Salmon and Watersheds.*	ORS, Chapter 477 addresses the fire protection of forests and vegetation, including sections on urban interface fire protection, hazard abatement, fire abatement, fire prevention, and related sections. Chapter 527 contains provisions which pertain to timber harvest and road construction regulations in landslide areas.
Department of Geology and Mineral Industries (DOGAMI) http://www.oregongeology.com/sub/default.htm	Works to develop geologic maps and data to enable Oregonians to understand geology and to mitigate the hazards resulting from earthquakes, tsunamis, landslides, and other hazards; works with project partners, to develop a statewide seismic needs assessment; focuses much effort on risk reduction, often in partnership with other federal, state, and local agencies, and the private sector; provides information which leads to the construction of safer buildings; works on sighting of natural gas cogeneration power plants, correctional facilities, gas pipelines using policy decisions related to geologic, seismic and coastal hazards; also works with local partners to develop systematic evaluations of risk to people and property so mitigation efforts can be prioritized.	ORS, Chapter 516 creates and defines the duties; Section 516.030(3) directs DOGAMI to administer on a cooperative basis studies and programs that will reduce the loss of life and property by understanding and mitigating geological hazards.
Department of Land Conservation and Development (DLCD) www.lcd.state.or.us	Manages the statewide land use planning program; Goal 7 of which addresses development in places subject to natural hazards, requiring that jurisdictions apply "appropriate safeguards" when planning for development there. The goal requires local comprehensive plans to include inventories, policies, and ordinances which will reduce losses. DLCD supports local government efforts to address natural hazards through technical assistance during periodic plan review; provides workshops and responds to local government requests for information. DLCD manages the National Flood Insurance Program (NFIP) in the State of Oregon through an agreement with FEMA. As part of the NFIP the DLCD manages the Map Modernization Program and the Cooperating Technical Partners Program. DLCD also manages the Oregon Coastal Management Program, which implements a coastal hazards and assessment program.	ORS, Chapter 197 provides the basis for comprehensive land use planning in the State of Oregon, including provisions governing development in floodplains and in other areas subject to natural hazards, which are intended to mitigate the effects of such hazards. ORS, Chapter 476 provides the basis for the Conflagration Act.

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Department of State Lands (DSL) http://statelands.dsl.state.or.us	Responsible for a variety of service-related functions relating to land management and implementation of state removal-fill law. DSL's role in hazard mitigation is in the issuing of removal and fill permits or enforcement actions on wetlands waters of the state.	ORS, Chapters 196 and 390 address wetlands, issue of removal and fill permits or enforcement actions on the the beds and banks of the waters of this state. Many of these provisions have a tangential effect on floodplain management and flood hazard mitigation.
Oregon Military Department, Oregon Emergency Management (OEM) http://www.oregon.gov/OMD/index.shtml	Convenes the IHMT and provides overall coordination of natural hazards mitigation in the State of Oregon. The State Hazard Mitigation Officer (SHMO) is on the staff of the Office of Emergency Management. Among OEM's related responsibilities are chairing the Oregon Emergency Response System (OERS) Council, staffing the Oregon Seismic Safety Policy Advisory Commission (OSSPAC), developing and maintaining the state *Emergency Management Plan* and related documents, managing the Chemical Stockpile Emergency Preparedness Program and providing training and other assistance which help to mitigate hazards.	ORS, Chapter 401 Includes many of the state's emergency management statutes one section of which states that the general purpose of the law is to reduce the vulnerability of the State of Oregon to loss of life, injury to persons or property, human suffering, and financial loss resulting from emergencies.
Oregon State Police, Office of State Fire Marshal (OSFM) http://www.oregon.gov/OSP/SFM/	Develop, promote, and maintain protection of life, property, and the environment from fire and other perils through leadership, direct action, and coordination of public safety resources; provides hazard mitigation through programs to educate, inspect, survey, investigate, respond to emergency incidents, and communicate with the public and emergency responders. The Conflagration Act and the State Fire Services Mobilization Plan are coordinated at all levels of state, county, and city government and they foster cooperation in responding to fires and emergency incidents. OSFM employs Regional HazMat Emergency Response Teams to help ensure public safety regarding hazardous materials incidents occurring throughout the state. OSFM provides education and programs, inspections, information, reports, data and brochures, training programs, and emergency responses to incidents for the schools, governments, and the public.	ORS, Chapters 453 and 476-480 authorize the State Fire Marshal to perform a wide variety of education and training programs, inspections, investigative and information reports and other activities related to fire prevention, safety, and management.

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Public Utility Commission (PUC) www.puc.state.or.us	A regulatory agency for certain electric, gas, telecommunication, and water utility companies; enforces the National Electrical Safety Code and the Federal Gas Pipeline Safety Regulations, which address utility operations under both normal and emergency conditions; monitors utilities' actions and infrastructure under a wide variety of conditions, including natural hazards, to ensure code compliance and prudent practices. Promotes effective vegetation management practices to improve safety and reliability by its ongoing enforcement of statutes and rules via OAR 860-024 rules and FERC/. NERC Rules for transmission lines.	ORS, Chapters 756-759, 772 and 774 authorize the PUC to carry out its purpose.
Oregon Department of Transportation (ODOT) http://www.oregon.gov/ODOT/	Is the road authority for all state highways in Oregon, including interstate highways; works to maintain drainage, open culverts, clean ditches, and perform hydraulic studies; helps prevent or reduce damage to the state highway system caused by floods or landslides. ODOT invites and works with local public works agencies to become participating parties in the Oregon Public Works Emergency Response Cooperative Assistance Agreement. ODOT and local agencies completed a seismic retrofit prioritization study of Oregon's bridges in 1997. As of January 1999, ODOT completed seismic retrofit projects on 124 state bridges.	ORS, Chapter 810 designates ODOT as the road authority for all state highways and specifies a wide range of maintenance, operations, and analysis activities related to hazard mitigation, for example: drainage maintenance, culvert inventory, and the bridge seismic retrofit program.
Water Resources Department (WRD) www.wrd.state.or.us	Responsible for allocation of the water that is produced by watersheds each year; quantifies and provides public notification of flows throughout the state, and insures safe operation of certain dams and other hydraulic structures.	ORS Chapter 540 provides WRD statutory authorities for dam safety and a statewide hydrographic program for measuring river and stream flows.
Oregon Parks & Recreation Department www.oregon.gov/OPRD/index.shtml	Works to provide and protect outstanding natural, scenic, cultural, historic and recreational sites for the enjoyment and education of present and future generations. OPRD is responsible for land stewardship, marine conservation / rocky shores, several permit programs, department-wide resource policies, and park plants and animals. OPRD strives to provide a safe environment while maintaining the natural beauty and historic importance of our parks. In certain areas providing a safe environment for park users involves planning for natural disasters.	ORS Chapter 390 provides deals with the role of OPRD in dealing with state and local parks, recreation programs, scenic waterways and recreation trails

State IHMT Agency and Web Address	Hazard Mitigation Roles and Responsibilities	Natural Hazards Mitigation Legal Authority
Oregon Partnership for Disaster Resilience (OPDR) http://csc.uoregon.edu/opdr	OPDR is a coalition of public, private, and professional organizations working collectively toward the mission of creating a disaster resilient and sustainable state. Developed and coordinated by the Community Service Center at the University of Oregon, OPDR employs a service learning model to increase community capacity and enhance disaster safety and resilience statewide. Primary activities include community plan and project development support; applied research and technical resource development; training programs and capacity building, and the development of strategic alliances.	N/A

Cascadia Regional Earthquake Workgroup

The Cascadia Region Earthquake Workgroup (CREW) is a coalition of private and public representatives working together to improve the ability of Cascadia Region communities to reduce the effects of earthquake events.

CREW's goals include the following:

- Promote efforts to reduce the loss of life and property.
- Conduct education efforts to motivate key decision makers to reduce risks associated with earthquakes.
- Foster productive linkages between scientists, critical infrastructure providers, businesses and governmental agencies in order to improve the viability of communities after an earthquake event.

"Experience in Oregon tells us that the most effective measures for mitigation and response include a good program for monitoring statewide conditions, close coordination among state 'experts' who are involved in reporting statewide conditions, and a good public information program. While these activities do not actually provide direct mitigation, they promote public awareness and allow individuals and organizations to make preparations.
A second important factor in drought response and mitigation is to approach special water management practices with caution. It is easy for regulation activities to fall into a trap of invoking special use permits in a manner that will actually encourage more than normal use in some areas.

- *From the beginning of our effort in developing a state drought plan it was evident that we needed to concentrate on three things:*
- *Close coordination among state and federal agencies*
- *Procedures for obtaining the best data available on statewide conditions*
- *Establish a strong network and public information program to make data on existing conditions available"*

Source: Barry Norris, Administrator, Technical Services Division, Oregon Water Resources Department, *Planning for Drought*, 2001

Figure 4-D-2: Planning for Drought

Drought Council

The Drought Council is responsible for assessing the impact of drought conditions and making recommendations to the Governor's senior advisors. The Drought Council is, in turn, advised by a subcommittee of technical people who monitor conditions throughout the state and report these conditions monthly. It is known as the Water Availability Committee. In this manner the Drought Council keeps up-to-date on water conditions. Members combine this knowledge with information they bring from their organizations and differing geographic areas of the state in order to make recommendations for policy, response, and mitigation.

The Drought Council is chaired and facilitated by Oregon Emergency Management. Members of the Council include state and federal agencies, and private organizations involved in drought forecasting, assessment, response, or recovery. The goal of the Drought Council is to "strive to reduce the effects of an impending drought through a coordinated federal, state, local, and voluntary effort, consisting of the development of drought plans, policies, and procedures, and through coordinated state response."[6]

"The heart of the matter is the process of determining a menu of mitigation options that is fair, equitable, economically realistic, and environmentally responsible. As an example, when

[6] Drought Annex to the State Emergency Operations Plan, September 2002

surface water is in short supply, irrigators turn to groundwater. The added stress to groundwater aquifers may be environmentally feasible in some instances, and not in others. The argument can be made that even in groundwater aquifers that are already stressed, short-term use is feasible. However, groundwater pumping installations are expensive to develop and, once installed, they are not easily abandoned. Short-term use easily becomes long-term use, considering it is more reliable, and environmental problems grow.

Recommendations by the Drought Council include public information and proposals for reallocation of existing resources to be considered by the Governor. When a statewide emergency is declared by the Governor, existing resources are not normally reallocated for mitigation purposes. The Governor simply stresses the need for state agencies to perform as best they can in mitigation activities already included in existing programs." [7]

Specific tasks of the Drought Council include:

- Monitoring meteorologic and hydrologic conditions to determine the current and future severity of a drought;
- Estimating the severity of a drought and its impact on electric power consumption and generation, agricultural production, essential human needs, industrial output, fish and wildlife, state forests, and other areas as appropriate;
- Developing an inventory of physical, economic, or other resources available for responding to anticipated drought impacts;
- Determining potential conflicts between water users and electric power users, and initiating actions to minimize these conflicts;
- Coordinating drought response and recovery efforts;
- Acting as a clearinghouse for questions and requests for state and federal drought declarations;
- Assisting the Governor and Oregon Emergency Management in determining the need for various federal disaster declarations and other federal assistance;
- Reporting to the Governor's Natural Resource Advisor;
- Facilitating and coordinating development of water and power conservation plans; and
- Facilitating and coordinating public information processes that encourage voluntary conservation measures.

Energy Facility Siting Council

The Energy Facility Siting Council reviews proposed energy facilities for seismic vulnerability through its structural standard, Oregon Administrative Rule (OAR) 345-022-0020. This standard is a safety standard rather than a reliability standard. It ensures that structural failure at an energy facility will not endanger

---

[7] Barry Norris, Administrator, Technical Services Division, Water Resources Department, *Planning for Drought*, 2001

workers or the public. It does not require that energy facilities be proven to remain operable in a seismic event because the Council assumes that key safety facilities such as hospitals will have backup electricity.

The standard requires that:

- The applicant, through appropriate site-specific study, has adequately characterized the site as to appropriate seismic design category and expected ground motion and ground failure, taking into account amplification during the maximum credible and maximum probable seismic events;
- The applicant can design, engineer, and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events (as used in the rule, "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence);
- The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and
- The applicant can design, engineer and construct the facility to avoid dangers to human safety presented by the hazards identified.

The Council reviews proposed energy facilities such as power plants, major electric transmission lines, major gas pipelines (greater than 16 inch diameter) for compliance with this standard. They do so in consultation with Oregon Department of Geology and Mineral Industries under an interagency agreement.

In response to an electricity shortage, the 2001 Oregon Legislature created an expedited review process for certain qualifying power plants. These power plants are generally not required to meet the structural standard; however, the Oregon Office of Energy, in consultation with Oregon Department of Geology and Mineral Industries, can still impose conditions on these plants related to the structural standard.

Hazard Mitigation Grant Review Board

The Hazard Mitigation Grant Review Board is an intergovernmental body which when convened reviews, discusses, ranks, and recommends project selections for funding under Section 404 of the Stafford Act (aka Hazard Mitigation Grant Program – HMGP). The Board uses the criteria listed in Section 6, *Established Eligibility Criteria and Ranking Measures for Multi-Hazard Mitigation Measures,*, and the goals and objectives of hazard mitigation plans for the geographic area in question to evaluate proposed projects for funding.

With requirements for FEMA-compliant (201.6) local mitigation plans to be eligible for Section 404 grants, the need to convene the Hazard Mitigation Grant Review Board has been largely replaced by project actions and priorities identified in those local mitigation plans. In order to expedite the Section 404

grant offering early in the post-disaster recovery process, HMGP project funding is first prioritized to the disaster-declared counties (and all eligible applicant entities therein) on a pro rata share basis of their Public Assistance and Individual Assistance eligible costs as initially determined during the Preliminary Damage Assessment. The pro rata applicant share can be further refined at either the 12-month or 18-month HMGP lock-in. HMGP planning grant funding is available statewide from the onset of the program's availability.

During the PA and HMGP Applicant Briefing, the state promulgates broad priorities and project categories for Section 404 project pre-applications that tend to focus on the nature of the disaster and related mitigation opportunities. Representatives from the Hazard Mitigation Grant Review Board and the State IHMT are encouraged to provide their input into establishing the broad priorities and project categories for Section 404 project pre-applications early in the process. The Hazard Mitigation Grant Review Board plays a key role in selecting state 5% initiative projects as there are oftentimes many more "5%" projects than available funding.

Board Membership

- Director of the Office of Emergency Management or designee (most usually the Section Director, Financial and Recovery Services who is also the State Coordinating Officer for major disaster declarations), who chairs the Board;
- State Floodplain Program Coordinator (Natural Hazards Program Coordinator) of the Department of Land Conservation and Development or designee;
- President of the Oregon Emergency Management Association (OEMA) or designee;
- A representative of the Association of Oregon Counties (AOC) and/or the League of Oregon Cities (LOC); and
- For flood disasters and related projects, Chief of the Emergency Management Branch, Portland District, U.S. Army Corps of Engineers (USACE) or designee.

The State Hazard Mitigation Officer (SHMO) of the Office of Emergency Management provides staff and technical assistance, and presents hazard mitigation projects to the Board, but is not a voting member.

Oregon Board of Geologist Examiners

In 1990 the Oregon Board of Geologist Examiners adopted guidelines to assist professionals in preparing engineering geologic reports in the state. Then in 1996, the Board adopted additional guidelines for site-specific seismic hazard reports for essential and hazardous facilities, major structures and special occupancy structures as provided in ORS 455.447. A complete listing of all report elements is included in Section 1802.6.1 of the *Oregon Structural Specialty Code.* In 2001, the Board established a Memorandum of Understanding with the Engineering & Land Surveying Examiners Board to clarify the roles of Certified Engineering Geologists and Geotechnical Engineers.

Oregon Emergency Management Association

Oregon Emergency Management Association (OEMA) is the association for Oregon's emergency management professionals. OEMA provides over 200 public, private, and non-profit members with the following:

- A network for training, education, and preparedness information and professional development;
- A forum for the sharing of knowledge, ideas, processes and building partnerships; and
- A collective and unified voice for emergency management issues in Oregon.

OEMA promotes the efforts of Oregon's communities to plan for all natural and human caused hazards through improved mitigation, preparedness, response, and recovery capabilities.

Oregon Lidar Consortium

Formed by the Department of Geology and Mineral Industries, the Oregon Lidar Consortium (OLC) develops cooperative agreements for the collection of high-quality lidar that benefits the public at large, the business community, and agencies at all levels of government. The goal of the OLC is to provide high-quality lidar coverage for the entire state. The collection of lidar data can assist governments in better identifying hazardous areas.

Oregon Seismic Safety Policy Advisory Committee

OSSPAC is a state advisory commission created in February 1990 through an executive order from Governor Neil Goldschmidt and established in statute by the 1991 Oregon Legislature (ORS 401.337).

It is made up of 18 members with interests in earthquake safety: Building Codes Division, Oregon Emergency Management, Department of Geology and Mineral Industries, Department of Land Conservation and Development, Oregon Department of Transportation, two representatives from the Oregon Legislature, one local government representative, one member from education, three from the general public and six members from affected industries, such as homebuilders and banking industries.

The purpose of the work of OSSPAC is to reduce exposure to Oregon's earthquake hazards by:

- Developing and influencing policy at the federal, state, and local government levels;
- Facilitating improved public understanding and encouraging identification of earthquake risk; and
- Supporting research and special studies, appropriate mitigation and response and recovery.

The Commission has proposed concepts to the Oregon Legislature on improving seismic safety in Oregon. They have prepared a document entitled *Oregon at Risk,* which outlines seismic hazards in the state. In 2004 the Commission

provided a venue to the General Obligation (GO) Bond Task Force to develop policy recommendations for implementation of SB 14 & 15 (2001). These bills and general obligation bonds for funding of the grant program would improve the earthquake safety of public schools and emergency response facilities across the state.

Oregon Sea Grant Extension

The Oregon State University Extension Service conveys research-based knowledge to a variety of businesses owners, growers, foresters, youth and community leaders in an effort to improve their lives, their homes, their businesses and their communities. The Oregon Sea Grant program provides education regarding watershed health and creating hazard resilient coastal communities with particular attention placed to earthquake and tsunami hazards.

Pacific Northwest Seismograph Network

The Pacific Northwest Seismograph Network operates seismograph stations and locates earthquakes in Oregon and Washington. They are funded by the US Geologic Survey, the Department of Energy and the State of Washington. Their website provides information on Pacific Northwest earthquake activity and hazards.

Pacific Northwest Wildfire Coordinating Group

The Pacific Northwest Wildfire Coordinating Group provides leadership in interface and wildland fire management for local, tribal, state and federal agencies. The PNWCG is comprised of USDA-Forest Service, USDI-Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Fish and Wildlife Service, Oregon Department of Forestry, washing Department of Natural Resources, Washington Association of Fire Chiefs, The Oregon Fire Chiefs Association, The Oregon State Fire Marshall and the Washington State Fire Marshall.

Water Availability Committee

The Water Availability Committee is a subcommittee of the Drought Council. The committee is chaired by the Oregon Water Resources Department. Committee members include representatives from the National Weather Service, NW River Forecast Center, Natural Resources Conservation Service, U.S. Geological Survey, Oregon Climate Service,[2] and Oregon Department of Forestry. The primary responsibility of the Water Availability Committee is to determine the appropriate Oregon Drought Severity Index for locations throughout the state.

State Pre-Disaster Hazard Mitigation Programs

Conservation Reserve Program

CRP retires eligible cropland from agricultural production and plants the land to permanent grass cover that reduces erosion and benefits wildlife populations.

---

[2] The Oregon Climate Service and Oregon Climate Change Research Institute are based at Oregon State University.

CRP does a very good job of providing cover that reduces windblown dust and has been effective in reducing soil erosion in the areas most prone to wind erosion. However, silt soils easily stay suspended for long periods of time and thus can move great distances affecting visibility on roads away from the protected fields. The strategy to encourage a strip of CRP along the freeway has been determined to probably be ineffective at reducing dust storm intensity. Also, the fire hazard could be worse than the dust hazard. In Umatilla County, NRCS has designated an area near I-84 as a wind erosion priority area to influence enrollment into the Conservation Reserve Program.

Oregon Coastal Management Program

The Oregon Coastal Management Program (OCMP) is the combined effort of 32 cities, seven counties, and a host of state agencies to carry out the statewide lad use program on the Oregon Coast. OCMP's mission is to work in partnership with coastal local governments, state and federal agencies, and other stakeholders to ensure that Oregon's coastal and ocean resources are managed, conserved, and developed consistent with statewide planning goals.

To accomplish this mission OCMP provides substantial financial and technical assistance to coastal local governments for planning, capacity building, and special projects. OCMP also coordinates and integrates programs of local, state, and federal agencies to support local planning and to protect and restore coastal natural resources, and reviews state and federal permits to ensure compliance with local, state, and federal program requirements. OCMP also utilizes the Internet to provide coastal data and information to a wide public through the Oregon Coastal Atlas.

URL: http://www.oregon.gov/LCD/OCMP/about_us.shtml

DOGAMI Partnership with U.S. Geological Survey National Landslide Hazard Program

DOGAMI has entered into a collaborative partnership with this program, centered on three targeted goals for Western Oregon: 1) develop inventory maps and digital databases of existing deep-seated landslides, 2) develop predictive hazard maps of areas prone to rapidly moving landslides, and 3) develop susceptibility maps of deep-seated landslides for targeted developable areas. The second of these incorporates the mandates of Oregon Revised Statutes 195.260 (2003) to produce *further review areas* of rapidly moving landslide hazard. This will be conducted in cooperation with local governments and will provide some technical assistance to local governments to facilitate the use and application of this information. A Landslide Advisory Committee consisting of local government stakeholders and state and federal agencies will aid the agency in prioritizing projects.

DOGAMI Earthquake Hazard Mitigation Program

DOGAMI's organic statute gives the agency broad responsibility and authority for evaluating all geologic hazards statewide, including earthquake hazards. DOGAMI has published numerous maps and reports on the earthquake hazards of the state. The agency, in partnership with other state and federal agencies, has

undertaken a wide-ranging program in Oregon to identify seismic hazards, including active fault identification, bedrock shaking, tsunami inundation zones, ground motion amplification, liquefaction, and earthquake induced landslides. Since the last update of this plan in 2007, DOGAMI has completed numerous seismic hazard projects and has several more in progress.

DOGAMI Tsunami Hazard Mitigation Program

The primary goal of the OregonTsunami Hazard Mitigation Program is to reduce loss of life and property damage from tsunamis. Additionally, the program aims to promote community preparedeness through development of mitigation products and the implementation of a coast-wide, volunteer driven education and outreach initiation to support the National Weather Service's *TsunamiReady*™ progam. Funding granted from the National Tsunami Hazards Mitigation Program is being used to complete the next generation of tsunami inundation maps along Oregon's 43 *TsunamiReady*™ communities.

ODF National Fire Plan Implementation in Oregon

Under the National Fire Plan (NFP), funding opportunities for local WUI planning, prevention and mitigation projects first became available in 2000. Since that time, Oregon has aggressively sought funding for a wide variety of projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels. The majority of these monies have been used to fund fuels reduction projects on individual properties and to establish community fuel breaks in the most wildfire prone portions of the state. NFP funds have also been used to expand fire prevention efforts, to educate local officials about how they may help address the WUI situation, to implement Senate Bill 360, to improve public awareness about the wildfire problem, and to better identify areas especially exposed to wildland fire.

ODFW Habitat Resources Program – Riparian Lands Tax Incentive

The Riparian Tax Incentive Program, authorized by ORS 308A.350—308A.383, offers a property tax incentive to property owners for improving or maintaining qualifying riparian lands. Under this program, property owners receive complete property tax exemption for their riparian property. This can include land up to 100 feet from a stream.

When the Riparian Tax Incentive law was passed in 1981, the Oregon Legislative Assembly declared that "it is in the best interest of the state to maintain, preserve, conserve and rehabilitate riparian lands to assure the protection of the soil, water, fish and wildlife resources of the state for the economic and social well-being of the state and its citizens." Healthy riparian zones are important to the resource by providing: cooler water due to shading resulting in better habitat for salmon, trout and steelhead; more and better varieties of habitat for wildlife; increased water during summer low flow periods; erosion control by stabilizing streambanks with protective vegetation; and flood control.

ODFW Restoration and Enhancement Program

The Fisheries Restoration and Enhancement Program is a comprehensive program to restore state-owned hatcheries, enhance natural fish production, expand

hatchery production and provide additional public access to fishing waters. The R&E Program provides increased sport fishing opportunities, and also supports and improves the commercial salmon fishery.

The program was authorized by the Oregon Fisheries and Enhancement Act of 1989 and was renewed in 2009. The program focuses on projects that increase fish production (either hatchery or natural production), increase recreational or commercial opportunities or access to the fish resources, or improve fish management capabilities. Restoration projects that facilitate fish passage may also provide flood-control benefits.

OEM Pre-Disaster Mitigation Planning and Project Activities

State pre-disaster mitigation planning and project activities are an integral component of OEM's mission. OEM's Financial and Recovery Services Section provides oversight and administration of financial services and related funding that is passed-through to local governments. Specifically, the Section Director, SHMO, Alternate SHMO, Facilities Engineer (Public Assistance Officer), Seismic Grants Coordinator, and financial support staff work together closely on pre-disaster mitigation grant programs and project activities. Although OEM has limited staff support available for mitigation planning and project implementation activities, the state is able to effectively secure and manage FEMA's PDM and FMA grants.

The success of mitigation planning activities state-wide combines Oregon's past history of land use planning and goals with the integration of resources from FEMA's mitigation grants leveraged through the Oregon Partnership for Disaster Resilience. The concept of aggregating regional, jurisdictional mitigation planning needs that leverage and target financial and technical resources to geographic areas around the state has proven to be successful in securing funding and completing local mitigation plans.

OPDR Pre-Disaster Mitigation Planning Program

Despite the growing recognition of the need for long-term coordination to reduce risk from natural disasters, many communities in Oregon continue to experience difficulty in developing and implementing natural hazard risk reduction plans, policies and activities. Communities regularly suffer from a lack of technical and funding assistance, as well as insufficient coordination among public, private, and non-profit sectors at the local, regional, and statewide levels. OPDR works to address these challenges and offers a model of how increased communication, coordination and collaboration between diverse partners can assist communities in reducing their risk from natural hazards. The Pre-Disaster Mitigation (PDM) program is completely funded by nationally competitive federal grants with in-kind match coming from local communities and the University of Oregon. Mitigation planning occurs in partnership with Oregon Emergency Management, the Department of Land Conservation and Development, Department of Geology and Mineral Industries, FEMA Region X, and local governments throughout Oregon.

OPDR Disaster Resilient University Initiative

The Oregon Disaster Resilient University (Oregon-DRU) is a new initiative between University of Oregon Emergency Management, Oregon Partnership for Disaster Resilience and Oregon's post-secondary institutions. The concept is to build a collaborative service center model between campuses in Oregon to link the skills, expertise, resources, and innovation of post-secondary education, federal agencies, professional and trade organizations, and state agencies to reduce risk on Oregon campuses. The Oregon-DRU has five specific service areas geared to enhance and support emergency management and risk reduction efforts within post-secondary institutions in Oregon.

ODF Community Wildfire Protection Plans

A Community Wildfire Protection Plan (CWP) is developed by a community in an area at-risk from wildfire. CWPs have three primary requirements: they must be developed collaboratively between local and state government representatives in consultation with federal agencies and other interested parties, they must identify and prioritize areas for hazardous fuels reduction treatments while also recommending methods for treatments that will protect at-risk communities and essential infrastructure, and lastly the must recommend measures that homeowners and communities can take to reduce ignitability of structure throughout the plan area. The statutory definition of a CWPP appears in Title I of the Healthy Forest Restoration Act of 2003. Oregon has 35 County CWPPs and 26 additional community CWPPs.

Oregon Plan for Salmon and Watersheds – Covered in Policies

"The Oregon Plan" is the state's program to restore native salmon and trout populations and to improve water quality. The overall goal of the Oregon Plan is to restore fish populations to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits.

Statewide Land Use Planning Program

Since 1973, Oregon has maintained a strong statewide program for land use planning. The foundation of that program is a set of 19 statewide planning goals. The goals express the State's policies on land use and related topics, such as citizen involvement, housing and natural resources. Oregon Statewide Planning Goal 7- *Areas Subject to Natural Hazards* was developed to protect people and property from natural hazards in Oregon. Goal 7 provides guidelines for local government planning officials to follow that can reduce their vulnerability to natural hazards. These guidelines include what factors local governments can consider in adopting policies and measures to protect people and property from natural hazards, and several ways in which local governments can implement mitigation measures more effectively.

NFIP, Map Mod, and cooperating technical partners

NFIP – The Oregon Department of Land Conservation and Development serves as the state NFIP coordinating agency, partnering with BCD and OEM. These agencies are responsible for existing flood mitigation strategies and programs. In addition to state programs, the NFIP of the FEMA is designed to help minimize

flood losses through local floodplain management. The NFIP relies on flood hazard mapping, flood insurance, and floodplain development standards implemented at the local level to reduce flood losses. In Oregon, 259 cities and counties and two tribal nations participate in the NFIP (total of 259 "NFIP" communities) and thus play a key role in flood mitigation.

Map Mod – Map Modernization is responding to National Flood Insurance requirements and feedback provided by Federal, State, and Local Program stakeholders. Flood hazard conditions are dynamic, and many NFIP maps may not reflect recent development and/or natural changes in the environment. Map modernization is the cornerstone for helping community officials and citizens be better prepared for flood related disasters.

Cooperating Technical Partners- The MMMS partnership mechanism provides the opportunity to pool resources and extend the productivity of limited public funds. MMMS partners include State or regional agencies and federally recognized tribes that serve communities participating in the National Flood Insurance Program (NFIP). MMMS partner activities include, but are not limited to, assessing mapping needs, reviewing hydrologic and hydraulic studies prepared for flood map revisions, and providing an inventory of base maps.

FEMA partners with State and regional organizations in the management of Map Mod activities for the following reasons:

- Management participation will help to ensure that the products resulting from Map Mod do not conflict and are complementary, not duplicative.
- MMMS provides a means to interject a tailored, local focus into a national program. Where unique conditions may exist, special approaches to communication, coordination, and compliance that may be necessary can be taken.
- The MMMS partnership mechanism provides the opportunity to combine resources and extend the productivity of limited public funds.

Oregon Coastal Management Program

Oregon's Coastal Management Program (OCMP) is the combined effort of 32 cities, seven counties, and a host of state agencies to carry out the statewide land use program on the Oregon coast. All statewide planning goals apply to the coast, but the OCMP emphasizes four coastal-related goals: Goal 16, Estuarine Resources; Goal 17, Coastal Shorelands; Goal 18, Beaches and Dunes; and Goal 19, Ocean Resources. The Department of Land Conservation and Development is the state's Coastal Management Agency and provides overall program administration and coordination. The OCMP assists coastal planners to identify and plan for costal hazards to prevent property damage and avoid loss of life. The OCMP also works with the Oregon Department of Geology and Mineral Industries and Oregon Sea Grant to identify and communicate natural hazards such as shoreline erosion and tsunami inundation.

Oregon Emergency Response System

Oregon's Emergency Response System coordinates and manages state resources in response to natural and technological emergencies and civil unrest involving multijurisdictional cooperation between all levels of government and the private sector. Established in 1972, OERS was the first state plan of its kind, it serves as the primary point of contact by which any public agency reports the state with notice of an emergency or disaster or from which they can request access to state or federal resources.

Oregon's Wetlands Protection Program

Oregon's Wetlands Program was created in 1989 to integrate federal and state rules concerning wetlands protection with the Oregon Land Use Planning Program. The Wetlands Program has a mandate to work closely with local governments and the Division of State Lands (DSL) to improve land use planning approaches to wetlands conservation. A Local Wetlands Inventory (LWI) is one component of that program. DSL also develops technical manuals, conducts wetlands workshops for planners, provides grant funds for wetlands planning, and works directly with local governments on wetlands planning tasks.

National Tsunami Hazard Mitigation Program

The National Tsunami Hazard Mitigation Program (NTHMP) is a state/federal partnership. The program's Coordinating Committee includes emergency management and geoscience representatives from the original five Pacific states (Alaska, California, Hawaii, Oregon, and Washington), emergency management representatives from the Atlantic and Gulf Coast states, the United States Geological Survey (USGS), the Federal Emergency Management Agency (FEMA), National Oceanographic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF). Funds to administer the program are provided by NOAA and have been available every fiscal year since federal FY 1997.

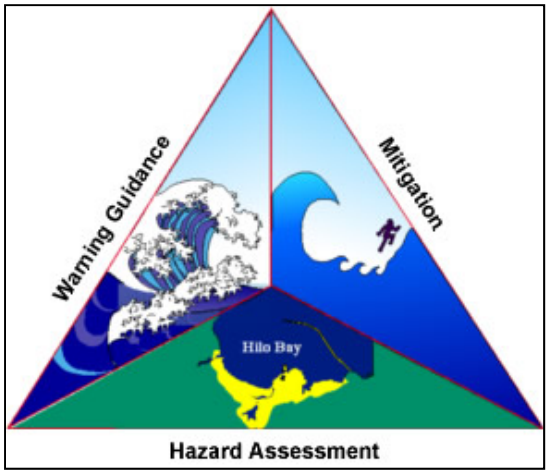


Figure 4.D.3: Tsunami Hazard Mitigation Program

The 2006 *Tsunami Warning and Education Act* (PL 109-424) called for a Forecasting and Warning Program, a Tsunami Hazard Mitigation Program, and a Tsunami Research Program. These programs include the upgrade of seismic networks and installation of open ocean tsunami detection equipment designed to reduce the number of false alarms; development of tsunami inundation models and maps; and education, preparedness and mitigation work, including an implementation plan to insure that the goals of the program were met.

Water Resources Division Dam Safety Program

The Water Resources Department Dam Safety Program reviews design plans, reports and specifications and approves for construction, modification or enlargement all hydraulic structures greater than or equal to 10 feet height and 3,000,000 gallons reservoir capacity (ORS 540.350). Design approval for High Hazard hydraulic structures typically includes a satisfactory review of Emergency Action Plans and inundation maps.

The Dam Safety Program maintains for the National Inventory of Dams, a database of all Oregon dams and reservoirs that exceed statutory size criteria regardless of ownership. The program also performs regular inspections of all existing non-federal dams statewide. The WRD dam safety program participates cooperatively with existing established federal dam safety programs such as U.S. Army Corps Engineers, U.S. Bureau Reclamation, Federal Energy Regulatory Commission and others in their design review and inspection of federal project dams, reservoirs and appurtenant works.

WRD is the designated state agency and the Hydroelectric Licensing Program is the lead for review and license permitting for new and existing hydroelectric projects. WRD's licensing program collects data and requests from other state agencies, negotiates settlements and assembles the state's criteria for power development and operation. When the process is completed, the conditions and requirements are incorporated into and apply concurrently with issuance of the federal license for all regulated hydroelectric projects statewide (ORS 543, ORS 543A).

Wildfire Awareness Week

Since 2001, when Governor John Kitzhaber proclaimed Oregon's first Wildfire Awareness Week, this interagency effort has grown with each passing year. That year, a coalition led by the Office of State Fire Marshal, and including the Department of Forestry, structural fire agencies, insurance industry representatives, and others developed and distributed a campaign tool kit with model proclamations and recorded pubic service announcements designed for distribution to media outlets. In 2008, the Keep Oregon Green Association became the caretaker of the annual campaign.

OEM Statewide Earthquake & Tsunami Drills

Earthquake and tsunami drills are conducted annually by OEM. On January 25, 2011 the first annual Great Oregon Shake Out occurred throughout Oregon with over 39,000 participants. In partnership with DOGAMI, OEM also conducts voluntary tsunami evacuation drills. The community-wide drills incorporate aircraft public address systems, in addition to the tsunami warning issued by the National Weather Service, in areas where sirens have limited coverage.

ODOT Winter Maintenance Practices

ODOT's winter maintenance practices include plowing, sanding and applying anti-icing liquids in order to increase efficiency of snow removal and to reduce motor vehicle crashes. To increase motorist safety in collaboration with local media, ODOT Region 5, publishes a special multi-page flyer known as the Winter

Roadway Guide as an annual newspaper insert. Additionally, ODOT publishes winter driving tips and information on its website geared to motorists and bicyclists.

Public Health Mitigation Planning

The Oregon Public Health Emergency Preparedness Program is an effort to anticipate, detect, assess and understand health risks associated with an emergency. The mitigation aspect focuses on long-term measures for reducing or eliminating risk including technological and policy changes. The department promotes guidance from the National Health Security Strategy, Interim Implementation Guides, and Community Mitigation Strategies.

Oregon Seismic Safety Policy Advisory Commission

The Oregon Seismic Safety Policy Advisory Commission has the unique task of promoting earthquake awareness and preparedness through education, research, and legislation. The mission of OSSPAC positively influence decisions and policies regarding pre-disaster mitigation of earthquake and tsunami hazards, increase public understanding of hazard, risk, exposure, and vulnerability through education seminars, etc., and be responsive to the new studies and/or issues raised around earthquakes and tsunamis.

As a result of the Loma Prieta Earthquake in the Bay Area of California in 1989,Oregon residents wanted the State government to address the earthquake hazard and preparedness of the State. As a result, the Interagency Seismic Task Force recommended that a new state commission be formed in response to this need. OSSPAC was formed as a result of Senate Bill 96 in 1991. Since this time, OSSPAC has continued to increase Oregon ’s awareness to earthquake hazards by supporting earthquake education, research, and legislation. Every two years, OSSPAC provides a summary report to the Governor of the Commission's activities. OSSPAC has also formed relationships with the Western States Seismic Policy Council (WSSPC) and the California Seismic Safety Commission which provides a persuasive advantage to affect federal policy for the West Coast.

National Programs & Organizations

AMERICAN PLANNING ASSOCIATION (APA)

The APA's Hazards Planning Research Center brings together solutions from multiple disciplines into a single source. The center provides original and applied research to identify best practices that that protect communities from natural and man-made hazards. APAs efforts are accomplished through research, outreach, education, policy and resource guides and other publications. The APA is currently in the midst of an update of its 1998 PAS report, *Planning for Post-Disaster Recovery and Reconstruction* (No. 483/ 484). Updates on the project status and other news is provided on the websites blog, *Recovery News*.

http://blogs:planning.org/postdisaster

FIREWISE

Firewise is a program developed within the National Wildland/Urban Interface Fire Protection Program, and it is the primary federal program addressing interface fire. It is administered through the National Wildfire Coordinating Group whose extensive list of participants includes a wide range of federal agencies. The program is intended to empower planners and decision makers at the local level. Through conferences and information dissemination, Firewise increases support for interface wildfire mitigation by educating professionals and the general public about hazard evaluation and policy implementation techniques. Firewise offers online wildfire protection information and checklists, as well as listings of other publications, videos, and conferences. www.firewise.org

FIREFREE PROGRAM – BEND, OREGON

FireFree is a unique private/public program for interface wildfire mitigation involving partnerships between an insurance company and local government agencies. It is an example of an effective non-regulatory approach to hazard mitigation. Originating in Bend, the program was developed in response to the city's "Skeleton Fire" of 1996, which burned over 17,000 acres and damaged or destroyed 30 homes and structures. Bend sought to create a new kind of public education initiative that emphasized local involvement. SAFECO Insurance Corporation was a willing collaborator in this effort. Bend's pilot program included:

- A short video production featuring local citizens as actors, made available at local video stores, libraries, and fire stations;
- Two city-wide yard debris removal events;
- A 30-minute program on a model FireFree home, aired on a local cable television station; and
- Distribution of brochures, featuring a property owner's evaluation checklist and a listing of fire-resistant indigenous plants.

The program continues to provide educational materials on fire risk reduction strategies and fire resistant plants.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The function of the NFIP is to provide flood insurance to homes and businesses located in floodplains at a reasonable cost, and to encourage the location of new development away from the floodplain. The program is based upon mapping areas of flood risk, and requiring local implementation to reduce that risk, primarily through restrictions on new development in floodplains. Elevation Certificates are forms published by FEMA required to be maintained by communities participating in the NFIP. New development is required to be elevated or otherwise designed to protect against flooding. The NFIP requires local governments to obtain certificates for all new construction in floodplains and to keep the certificates on file. Local governments must insure that elevation certificates are filled out correctly for structures built in floodplains.

V-Zone Construction

In many of Oregon's coastal communities, FEMA has mapped "V zones" (velocity zones), areas of special flood hazard that are subject to high velocity wave action from storm surges or seismic events. Because of the potential force associated with this wave action, special regulations apply for new construction and substantial improvements in "V zones."

Community Rating System (CRS)

Community Rating System (CRS) is a program operated by the NFIP that recognizes communities who go beyond the minimum requirements of the NFIP. CRS offers reduced flood insurance premiums for communities who adopt higher standards and encourages community activities that reduce flood losses, facilitate accurate insurance rating, and promote flood insurance awareness.

FEMA REGION 10 POLICY ON FISH ENHANCEMENT STRUCTURES IN THE FLOODWAY

FEMA regulates development in the floodway. The regulations require that a community prohibit encroachments (including fill, new construction, and other development) within the floodway unless it is demonstrated by engineering analysis that the proposed encroachment will not result in any increase in flood levels during the occurrence of a 100-year flood event. The recent designation of several northwest salmon and steelhead runs as threatened or endangered has resulted in an increased effort to restore fish habitat. Restoring habitat often involves placing structures in stream.

ARMY CORPS OF ENGINEERS PERMIT PROGRAM

The U.S. Army Corps of Engineers is responsible for the protection and development of the nation's water resources, including navigation, flood control, energy production through hydropower management, water supply storage and recreation. The Corps administers a permit program to ensure that the nation's waters are used in the public interest, and requires any person, firm, or agency planning work in the waters of the United States to first obtain a permit from the Corps. Permits are required even when land next to or under the water is privately owned. It is a violation of federal law to begin work before a permit is obtained and penalties of fines and/or imprisonment may apply. Examples of activities in waters that may require a permit include: construction of a pier,

placement of intake and outfall pipes, dredging, excavation and depositing of fill. Permits are generally issued only if the activity is found to be in the public interest. In Oregon, the Division of State Lands (DSL) and the U.S. Army Corps of Engineers jointly issue permits for development of these activities. As mentioned in the discussion of DSL permits, local planning agencies are required to sign off on any permits issued by DSL and the U.S. Army Corps of Engineers and water quality certification is required by the Department of Environmental Quality.

Pre-Disaster Hazard Mitigation Projects

Tsunami Evacuation Signs

Figure 4.D.4: Tsunami Hazard Zone

The Oregon Department of Transportation (ODOT) collaborated with DOGAMI, OEM, and coastal counties to develop signs denoting tsunami hazard zones, evacuation routes, and evacuation sites. ODOT manufactures the signs and makes them available to local governments at cost. The signs also have been used in California, Washington, Alaska, the Philippines, and Japan.

A project started in 2003 with OEM, DOGAMI, and coastal counties involved the development of signs that tell motorists when they are entering or leaving a tsunami hazard zone. The new signs have been placed on U.S. 101, the Pacific Coast Highway, when local communities establish the locations of their tsunami evacuation routes.

As local tsunami evacuation plans are developed, ODOT will work with communities to develop corresponding alternate route plans for U.S. 101 and other state highways.

Wind Erosion Control Practices

The Natural Resources Conservation Service (NRCS) and local soil and water conservation districts (SWCD) have long sought to reduce wind erosion of cropland. Farming practices commonly used in dryland cropping areas, such as reduced tillage and residue management, reflect this interest. However, occasionally after long periods with little or no precipitation any activities that disturb soil or reduce vegetation can lead to conditions conducive to dust storms.

Nationally, NRCS has developed quality criteria for wind erosion control practices and use a wind erosion equation model for predicting potential wind erosion under various farming systems.

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.

At this time, wind erosion control is a requirement under the Federal Farm Bill for certain commodities such as wheat and corn, but depending on the rotation, may not be a requirement for other commodities such as potatoes or vegetables. USDA-NRCS is generally responsible for these programs.

Wind erosion is ranked high among concerns for funding under the Environmental Quality Incentive Program, the current USDA cost-share program available to landowners.

No Till Cropping

SWCDs have been actively promoting, through education and incentives, direct seeding methods. Direct seeding or no-till cropping systems utilize technology that places seed and fertilizer into undisturbed soil and residue from the previous crop. This results in minimal soil disturbance and reduced potential for wind and water erosion.

Cooperative State Research, Education, and Extension Service (CSREES) funded research on the Columbia Plateau has demonstrated that no-till cropping can significantly reduce predicted dust emissions during severe winds: http://www.csrees.usda.gov/nea/nre/sri/air_sri_dust.html

The research shows that no-till cropping can reduce predicted dust emissions by 94% during severe wind events, compared to conventional wheat-fallow. Research continues on measuring dust emissions from fields on the Columbia Plateau, a 50,000 square-mile region in Washington, Oregon, and Idaho containing one of the driest, yet most productive, rain-fed wheat regions in the world. No-till only works for some crops under certain conditions, however, and even in situations where it does work, some farmers find that they need to till the soil periodically to reduce diseases and redistribute soil moisture.

Great Oregon ShakeOut

Coordinated by Oregon Emergency Management (OEM), the purpose of the Great Oregon ShakeOut is to help Oregonians get ready for big earthquakes, practice how to protect themselves (drop, cover, and hold on), and to prevent disaster from becoming catastrophes. The first Oregon ShakeOut occurred on January 26, 2011, and it was the largest earthquake drill to ever take place in Oregon. The ShakeOut will occur annually in January of each year.

National Fire Plan

Under the National Fire Plan (NFP), funding opportunities for local WUI planning, prevention and mitigation projects first became available in 2000. Since that time, Oregon has aggressively sought funding for a wide variety of projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels. As of early 2007 the ODF had received approximately $25 million. The majority of these monies have been used to fund fuels reduction projects on individual properties and to establish community fuel breaks in the most wildfire prone portions of the state. NFP funds have also been used to expand fire prevention efforts, to educate local officials about how they may help address the WUI situation, to implement Senate Bill 360, to improve

public awareness about the wildfire problem, and to better identify areas especially exposed to wildland fire.

Other Programs:

Trip Check

TripCheck is an online travel planning resource, developed by the Oregon Department of Transportation (ODOT) to provide travelers with the latest travel conditions and information via road cameras, continuous winter travel updates, year-round highway construction details, and other valuable tips. Several projects were included in providing the public with this resource, including installation of closed circuit television cameras on remote state highways, installation of Road Weather Information Systems (RWIS) on state highways. The RWIS's are used to make winter road maintenance decisions, and data is shared with the public. Installation of Wind Warning Systems on state highways to alert drivers to hazardous wind conditions at bridge crossings and along coastal highways.

Highway Advisory Radio

ODOT has coordinated the installation of Highway Advisor Radio transmitters for Highway Advisory Radio in select travel corridors. Locations include; installation of radio transmitters along Interstate 84 in Morrow and Umatilla counties for, and along the full length of US 101.

When an emergency occurs, the ODOT District 12 office selects the appropriate pre-recorded message on the system and transmits it via radio. At the same time, ODOT activates yellow flashing beacons. Motorists seeing the signs and flashing lights should tune to 1610 AM and comply with any messages. In the case of a dust storm, motorists are advised to slow down and exit the freeway as soon as possible. ODOT worked with OEM's Chemical Stockpile Emergency Preparedness Program office in Pendleton and local emergency management personnel on this project.

Also installed in the system is the ability to re-broadcast National Weather Service (NWS) weather information. NOAA Weather Radio is re-broadcast on a continuous basis unless there is an emergency. An emergency broadcast then overrides the NOAA Weather Radio service

ODOT Mitigation Efforts

ODOT has several implemented several hazard mitigation measures and increase motorists' safety, including:

- Installation of Debris Flow Warning Signs at designated locations on three at-risk highways: Oregon 38, Oregon 6, and I-84
- Installation of automated Flood Warning systems on some state highways - used to monitor water levels and to notify maintenance crews and the public of potentially hazardous conditions
- Installation of Snow Zone signs on state highways notifying motorists of chain and traction tire requirements ahead.
- Installation of Tsunami Zone signs on state highways.

- Installation of 511 statewide toll free telephone number - allows drivers to hear road and weather information by phone.
- Installation of 511 statewide toll free telephone number - allows drivers to hear road and weather information by phone.

Other ODOT mitigation:

- Developed ODOT's TripCheck web site (www.tripcheck.com) used to share road and weather condition information with the public
- Installation of Highway Advisory Radio on full length of US 101 (Oregon Coast Highway) for earthquake, tsunami, flood, slide, etc.
- Installation of Debris Flow Warning Signs at designated locations on three at-risk highways: Oregon 38, Oregon 6, and I-84
- Installation of Highway Advisory Radio on I-84 near area at risk for dust storms
- Installation of Closed Circuit Television Cameras to monitor weather and road conditions on state highways at remote locations
- Installation of Road Weather Information Systems (RWIS) on state highways - RWIS weather stations are used to make winter road maintenance decisions and data is shared with the public on the TripCheck web site.
- Installation of automated Flood Warning systems on some state highways - used to monitor water levels and to notify maintenance crews and the public of potentially hazardous conditions
- Installation of Wind Warning systems on state highways to alert drivers to hazardous wind conditions at bridge crossings and along coastal highways. These systems monitor the wind, activate warning signs, and provide wind warning advisories to ODOT's TripCheck website.
- Installation of Snow Zone signs on state highways notifying motorists of chain and traction tire requirements ahead.
- Installation of Tsunami Zone signs on state highways.
- Installation of 511 statewide toll free telephone number - allows drivers to hear road and weather information by phone.

Publications / Studies

Energy Assurance Plan

As the designated State Energy Office, the Oregon Department of Energy (ODOE) is responsible for developing and maintaining the State Energy Emergency Plan under the State Energy Program. ODOE was required to review and update the State Energy Emergency Plan annually for submission to USDOE as the state energy Plan of Record.

The September 2009 Oregon Energy Emergency Response Plan was revised and renamed the

Oregon State Energy Assurance Plan as a result of a grant awarded to ODOE by the USDOE's Office of Electricity Delivery and Energy Reliability (DOE/OE) to enhance state government energy assurance resiliency. As a result, new information was added to the state's 2009 plan.

This includes information on seismic vulnerabilities and earthquake impacts on the critical energy infrastructure in Oregon from a magnitude 9 Cascadia Subduction Zone earthquake. Furthermore, the state is considering the integration of new energy portfolios like alternative fuels as well as smart grid technologies into Oregon's response strategies to energy emergencies to improve energy assurance resiliency.

"Resiliency" is defined as the ability of a critical infrastructure to absorb, adapt to, and/or rapidly recover from a potentially severe and disruptive event. "Critical infrastructure" involve energy lifelines that, if disrupted, could significantly impact public health and safety, the economy, and/or national security. Any prolonged interruption of the supply of basic energy whether it is petroleum products, electricity, or natural gas - could do considerable harm. As a result, improving energy assurance and resiliency in Oregon's energy infrastructure is intended to help mitigate the impacts of an energy supply interruption and help the state return to normal conditions as quickly as possible, regardless of the cause of the interruption. Oregon's energy assurance and resiliency planning takes into account four key components. This includes: 1) understanding the energy infrastructure, Oregon's Energy Profile, and system interdependencies, 2) assessing potential risks and hazards threatening the state's critical energy infrastructure and considering short and long-term mitigation measures to reduce risk and vulnerability, 3) developing effective plans and procedures to help minimize the impacts of an energy supply interruption and rapidly restore the energy infrastructure should an emergency occur, and 4) increase public awareness. The Oregon State Energy Assurance Plan is designed to provide an overview of the first three components to help achieve the fourth component, which is to increase general awareness of the energy infrastructure, risks to the state energy lifelines, and the state's approach to restore fuel, power, and natural gas should an emergency occur.

The Oregon State Energy Assurance Plan is an introduction to how Oregon prepares for, responds to, and recovers from energy emergencies. The Oregon State Energy Assurance Plan complies with the National Association of State Energy Officials (NASEO) guidelines, the NASEO Energy Assurance Planning Framework, the National Response Framework, the National Infrastructure Protection Plan, and the National Incident Management System. The Oregon Energy Assurance Plan is also consistent with the Oregon Emergency Management Plan and Oregon Revised Statute (ORS) 401 to "coordinate the activities of all public and private organizations providing emergency services within this state." ODOE will review and update the Oregon State Energy Assurance Plan annually or as needed to reflect changing response trends and strategies and to incorporate

Oregon Climate Change Adaptation Framework (2010)

The plan would provide a framework for state agencies to identify authorities, actions, research, and resources needed to increase Oregon's capacity to address the likely effects of a changing climate.

Given the broad range of expected changes to Oregon's climate in the coming decades, the breadth of state-level responsibilities, authorities, and programs that will likely need to respond to the effects of future climate conditions, and limited time, it has only been possible to begin the development of a climate change adaptation strategy for Oregon. This report constitutes a *framework* for the continued development of strategies and plans to address future climate conditions. This Climate Change Adaptation Framework provides context, identifies risks, lays out short-term priorities, and provides momentum and direction for Oregon to prepare for future climate change. The framework has been developed in parallel with the Oregon Climate Assessment Report (OCAR) by the Oregon Climate Change Research Institute (OCCRI). The OCAR and this framework are intended to complement each other. The OCAR identifies the most likely impacts from climate change, which will help the state prioritize resources to prepare for and adapt to a changing and variable climate. The OCCRI assisted in the development of this Framework.

This Framework lays out expected climate-related risks, the basic adaptive capacity to deal with those risks, short-term priority actions, and several steps that will evolve into a long-term process to improve Oregon's capacity to adapt to variable and changing climate conditions.

Oregon Climate Assessment Report (2010)

In 2007, the Oregon State Legislature charged the Oregon Climate Change Research Institute, via HB 3543, with assessing the state of climate change science including biological, physical and social science as it relates to Oregon and the likely effects of climate change on the state. This inaugural assessment report is meant to act as a compendium of the relevant research on climate change and its impacts on the state of Oregon. This report, published December 2010, draws on a large body of work on climate change impacts in the western US from the Climate Impacts Group at the University of Washington and the California Climate Action Team.

State Emergency Management Plan

This Natural Hazards Mitigation Plan is a document within Volume I, Preparedness and Mitigation, of the state Emergency Management Plan, administered by Oregon Emergency Management. The other volumes of the Emergency Management Plan are: Volume II, Emergency Operations Plan, and Volume III, Relief and Recovery. The figure below illustrates these organizational relationships.

Volume I: "Preparedness and Mitigation" includes the plans and guidance necessary for the state to prepare and mitigate the effects of a disaster. It includes the state disaster hazard assessment, exercise and training programs, and plans to lessen the physical effects of a disaster to citizens, the environment, and property. Volume I also includes this natural hazards mitigation plan.

Volume II: "Emergency Operations Plan," which is also referred to as the Basic Plan, describes in broad terms the organization used by the state to respond to emergencies and disasters. The EOP is supplemented by emergency Support

Function Annexes, Support Annexes and Incident Annexes. It describes common management functions including areas common to most major emergencies or disasters such as communications, public information, and others.

Volume III: "Relief and Recovery" gives guidance, process and rules for assisting Oregonians with recovering from the effects of a disaster. It includes procedures to be used by government, business, and citizens.

STATE FIRE SERVICES MOBILIZATION PLAN

The State Mobilization Plan is an all-hazard based plan used to mobilize fire resources to any incident beyond local fire service capabilities that are necessary to protect life, property, and the environment. It assumes the prior existence of mutual aid agreements that organize district and regional firefighting forces to cope with local emergencies.

The primary purpose of mutual aid is to supplement resources of a fire agency during a time of critical need. Mutual aid is based on reciprocal, non-reimbursed contributions for services rendered and is contingent upon a responding fire chief's approval. Mutual aid is given only when equipment and resources are available and dispatch will not jeopardize local firefighting capabilities.

Under the Emergency Conflagration Act, local firefighting forces will be mobilized when the state fire marshal believes that a fire or emergency is causing, or may cause, undue jeopardy to life and/or property and the Act is invoked by the governor.

For purposes of this plan, Oregon has been divided into fire defense districts. The Emergency Conflagration Act fire suppression resources of each fire defense district include the county, city and rural fire protection departments and districts, as well as any other resources available through mutual aid agreements.

The Mobilization Plan may be used separately from the Conflagration Act to mobilize local structural fire agencies for any emergency situation exceeding local mutual aid resources. However, reimbursement for responding resources is assured only when the governor invokes the Conflagration Act. Federal or state disaster assistance reimbursement may or may not apply to emergency services mobilizations.

The objectives of the Oregon Fire Service Mobilization Plan are:

- To provide organizational structure and operating guidelines for the expeditious mobilization and direction of Oregon fire service forces;
- To promote effective communication among agencies during the preparation for, progress of, and demobilization from a fire suppression operation or other emergency response activity;
- To effectively cooperate and coordinate the efforts of various participating agencies through the use of a common command structure and terminology;
- To ensure prompt, accurate and equitable apportionment of fiscal responsibility for fire suppression or other emergency response activity;

- To provide an OSFM Incident Management Team for effective support to local agencies and fire defense districts during major operations

Oregon's Communities at Risk Assessment

A statewide task force was formed in February 2004 as part of the Oregon Department of Forestry's Fire Program Review to develop a statewide assessment of *Communities at Risk*. The assessment was used to develop a statewide fuels strategy, and to help set large-scale priorities across geographic areas. A *Community at* Risk is a "geographic area within and surrounding permanent dwellings with basic infrastructure and services, under a common fire protection jurisdiction, government, or tribal trust or allotment, for which there is significant threat due to wildfire." The assessment identifies communities and assigns each a *low, moderate,* or *high* risk rating for *Risk, Hazard, Protection, Capability, Value,* and *Overall*.

DLCD Water Quality Model Code and Guidebook

In Oregon it is no longer possible to ignore the connection between urban development and degraded water quality. Extensive findings demonstrate that our urban streams do not meet state water quality standards, and do not adequately support native salmon populations. The best way to reverse these trends is to think differently about land use planning at the local level. Local governments are already rethinking the connection between land use and transportation as it relates to air quality. The new challenge is to amend local plans and codes to protect water quality.

The Water Quality Model Code and Guidebook is a companion to the Model Development Code and User's Guide for Small Cities. These documents were developed by the Department of Land Conservation and Development and the Department of Transportation under the Transportation and Growth Management Program (TGM). This guidebook integrates many of the "smart development" inspired code recommendations of the TGM project with recommended code language to achieve water quality objectives. The goal of this guidebook is to provide local communities, both small cities and counties, with a practical guide to protecting and enhancing water quality through improved land use regulations. The guidebook includes both model zoning code ordinances and comprehensive plan policies that are ready for implementation. It also provides references to other publications and resources which provide background information on the link between development activity and water quality.

While Goal 7 does not point specifically towards the issue of water quality, Goal 7 compliance entails measures that will help improve water quality. This goal notes that comprehensive plans "should consider as a major detriment, the carrying capacity of the air, land and water resources… (and) should not exceed the carrying capacity of such resources." In protecting against floods and other natural disasters, local governments may jointly address issues of water quality, such as limiting development within floodways and reducing impervious surfaces that increase runoff and flooding.

DOGAMI Tsunami Evacuation Maps

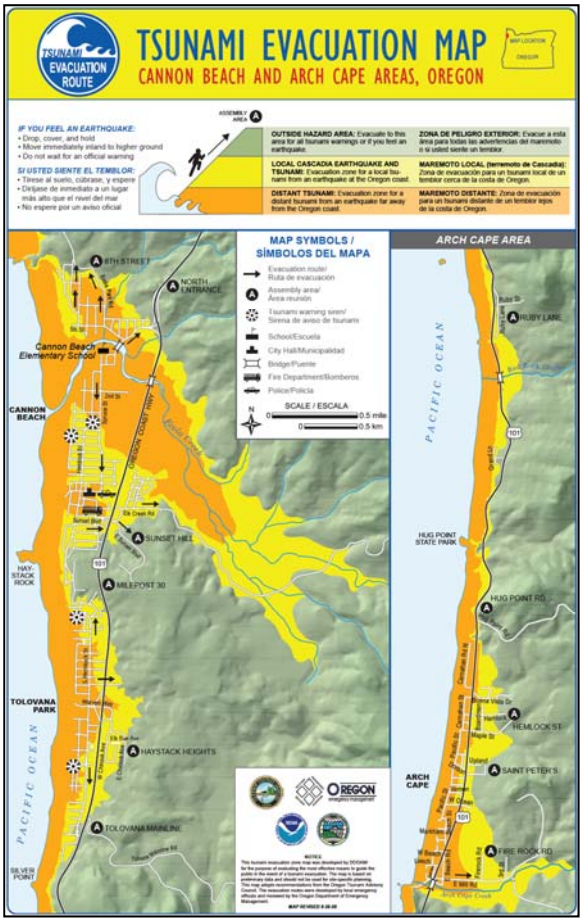


Figure 4.D.5. Cannon Beach-Arch Cape tsunami evacuation map, 2008, from DOGAMI web site, http://www.oregongeology.com/sub/earthquakes/Coastal/Tsubrochures.htm

The Department of Geology and Mineral Industries has statutory authority to take a lead role in the mitigation of geologic hazards statewide and assists the BCD in administering ORS 455.446 and .447. Tsunamis can potentially cause the most loss of life of any geologic hazard in the state, so mitigation and assessment of these hazards has a high priority in the agency

DOGAMI's Newport Coastal Field Office, in collaboration with OEM and DLCD is developing tsunami evacuation maps for every coastal population center. These maps and evacuation routes are also being compiled into an online Geographic Information System that is being developed for the coast by DLCD. Figure T-4 illustrates the 2008 format for evacuation maps in Oregon. The format prior to 2008 depicted only an evacuation zone based on a locally generated Cascadia tsunami. The 2008 map shows an additional, smaller evacuation zone appropriate for distant tsunamis. Strong ground shaking at the coast should trigger evacuation of the Cascadia zone, whereas the NOAA warning system will trigger evacuation of the distant tsunami zone.

DOGAMI, in collaboration with the Oregon Health and Science University and NOAA, has developed detailed tsunami inundation maps for several areas on the coast, including Gold Beach, Coos Bay, Siletz Bay (southern Lincoln City), Alsea Bay (Waldport), Yaquina Bay (Newport), Cannon Beach, Seaside-Gearhart, and Warrenton/Astoria.

The Cascadia Subduction Zone earthquake sources developed for maps produced prior to 2008 were also used as standards for similar mapping in Washington State. These sources for the northern Oregon coast and Washington were updated in a 2008 pilot study of Cannon Beach by DOGAMI (Figure 4.D.5).

These more detailed maps are used as guides for emergency response planning. DOGAMI plans to develop detailed inundation maps for other areas according to a priority list. Local steering groups established for each map project ensure that maps meet local needs. Local emergency officials review inundation and evacuation maps in the field to ensure that the boundaries are accurate and meet the practical necessities of local government.

DOGAMI also administers, in collaboration with local building codes officials, ORS 455.446 and ORS 455.447 that limit construction of critical and essential facilities in an official tsunami inundation zone. This regulatory zone was mapped along the entire coastline by DOGAMI in 1995. This zone is not appropriate for evacuation planning, but still gives some indication of the potential severity of tsunami flooding from a local earthquake on the Cascadia Subduction Zone.

The Public Education Team at DOGAMI develops and distributes numerous educational materials aimed at tsunami hazard mitigation. These materials can be obtained from them by contacting DOGAMI's retail outlet, the Nature of the Northwest Information Center (503-872-2750 or http://www.naturenw.org).

Other DOGAMI

- IMS-22, Hazard Map of Potential Rapidly Moving Landslides in Western Oregon (see Landslide chapter)
- Landslide Brochure (see Landslide chapter)

Mount Hood Coordination Plan

The Mount Hood Coordination Plan provides vital Mount Hood volcanic event response information for the areas that will be most affected by a volcanic event. The purpose of the Mount Hood Coordination Plan is to coordinate the actions that various agencies must take to minimize the loss of life and damage to property before, during, and after hazardous geologic events at Mount Hood volcano. The plan strives to ensure timely and accurate dissemination of warnings and public information.

Planning for Natural Hazards: Oregon Technical Resource Guide, 2000

Developed for DLCD by the Community Service Center's Oregon Natural Hazards Workgroup at the University of Oregon, the Technical Resource Guide (TRG) provides contacts, documents, and internet resources to assist planners, emergency managers, and citizens in mitigating earthquake hazards along with several other hazards. The TRG may be accessed online: http://opdr.uoregon.edu/sites/opdr.uoregon.edu/files/docs/PDM_General/Oregon_hazard_trg_full.pdf

Natural Hazards Mitigation in Oregon: an Evaluation of Natural Hazards Mitigation Planning and Implementation in Oregon

In January 2010, the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center received a grant from the Hazard Mitigation Grant Program (HMGP) to facilitate and document the State's Enhanced Natural Hazards Mitigation Plan update process. As part of the plan update process, OPDR and the Department of Land Conservation and Development (DLCD) were tasked with conducting a survey of natural hazards mitigation planning in Oregon. This reports is a summary of the findings of the natural hazards mitigation planning survey.

The survey assessed: 1) the extent to which natural hazards mitigation strategies were being implemented at the local level; and 2) the availability and applicability of technical resources designed to assist jurisdictions in planning for or mitigating

the effects of natural hazards. Additionally, the survey asked for suggestions on how to make hazards planning and mitigation more effective at both the state and local levels.

Where applicable, results are compared to a similar survey that was conducted by DLCD and the University of Oregon's Community Planning Workshop (CPW) in 1998. Survey results will be used to inform content within the State's Enhanced Natural Hazards Mitigation Plan and to develop more effective long-term statewide mitigation efforts.

Seismic Vulnerability of Oregon State Highway Bridges, Mitigation Strategies to Reduce Major Mobility Risks, *Oregon Department of Transportation, November 2009*

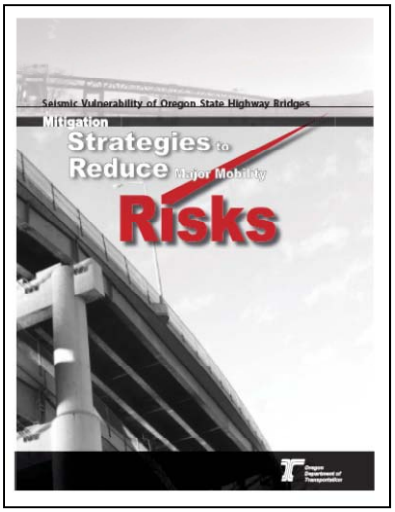


Figure 4.D.6. Seismic Vulnerability Report (ODOT, 2009)

This report describes potential damage to state highway bridges from six representative earthquake scenarios that are thought most likely to occur in Oregon. The study found that highway mobility would be severely reduced after a major Cascadia Subduction Zone event, as well as after a significant crustal earthquake. The report also considers possible mitigation, including bridge retrofit and strengthening to withstand seismic damage.

Oregon Transportation Plan

A sound transportation network is what enables Oregonians to reach jobs and recreation access goods and services, and meet daily needs. Due to the extent of the existing transportation infrastructure, and the importance of sustaining that infrastructure, there are numerous ways in which Oregon's transportation system could be adversely affected by any of Oregon's natural hazards. Just as other critical infrastructure can be vulnerable to natural hazards, so too can Oregon's transportation system. The Oregon Transportation Plan addresses the risk and vulnerability to natural hazards by outlining strategies for reducing risk, such as "Evaluate the impacts of geological hazards and natural disasters including earthquakes, floods, landslides and rockfalls, on the efficiency and sustainability of the location and design of new or improved transportation facilities as appropriate."

Oregon Highway Plan

Oregon's state highways are a critical component of the state's transportation network. Oregonians rely on highways to go between the state's widespread cities, towns, parks, forests, and businesses. Oregon's industries, including agriculture, timber, tourism, and technology, all depend on highways.

The Oregon Department of Transportation owns, operates, and maintains 7,483 miles (12,040 kilometers) of roads in every corner of Oregon. The state highway system is as diverse as Oregon itself–ranging from six-lane, limited access freeways with metered ramp entrances in the Portland area to the gravel road from Prineville to Brothers. The challenge facing Oregon is to efficiently and effectively guide this diverse highway system into the next millennium. Oregon will continue to grow. Forecasts predict that the state will have 1.2 million new

residents by 2020. With limited funding, intelligent investment strategies must be devised to help Oregon meet its long-term goals. Intelligent investments include planning for, and reduce vulnerability to natural hazards. The Oregon Highway Plan addresses this issue by recommending actions and policy elements that include identifying hazards, and improving the safety of potentially hazardous sites and corridors. Mitigation measures listed within the recommended actions include advance maintenance, structural reinforcement, flood proofing, emergency response planning, and development of emergency alternative routes. These risk reduction efforts can also bolster the State of Oregon's emergency response and post-disaster recovery efforts.

Drought Annex to the State Emergency Operations Plan

Droughts occur within drainage basins (watersheds) that usually involve more than one city or county. Some cities and counties benefit by planning on a regional level. The state Drought Annex provides information to facilitate regional planning efforts, model water curtailment measures for water utilities, and other strategies. It describes the state system for addressing drought emergencies, but it does not carry the force of law. Its purpose is to coordinate local, state, and federal agency response to drought emergencies and to provide water supplies for human consumption and use under conditions of inadequate supply.

Post-Disaster Hazard Mitigation Programs & Capabilities

Hazard Mitigation Grant Program

The state and local communities integrate mitigation into post-disaster recovery operations by taking advantage of Hazard Mitigation Grant Program (HMGP) dollars that become available after presidentially declared disasters. See the "Funding" section for a summary of HMGP project status.

OEM Disaster Recovery and Post-Disaster Mitigation

State post-disaster mitigation planning and project activities following disasters are an integral component of OEM's mission. OEM's Financial and Recovery Services Section provides oversight and administration of financial services and related funding that is passed through to local governments. Additionally, the Financial and Recovery Services Section manages disaster recovery activities for state and local governments in the event of a devastating emergency or disaster. Specifically, the Section Director, SHMO, Alternate SHMO, Facilities Engineer (Public Assistance Officer), Seismic Grants Coordinator, and financial support staff work together closely post-disaster mitigation grant programs and project activities. Although OEM has limited staff support available for post-disaster mitigation planning and project implementation activities, the state is able to effectively secure and manage FEMA's HMGP grants.

OEM also staffs county liaisons that are assigned specific counties to support operations both during and after disasters. By working closely with the state's Public Assistance Officer, the state is able to identify early mitigation opportunities immediately following a disaster declaration that can frequently be implemented quickly as a component of Section 406 disaster assistance.

BCD Post-Earthquake Inspection Program

BCD supports training to inspectors, architects, engineers, contractors and post earthquake inspectors by providing funding to agencies that provide training. Various classes in seismic design and construction techniques have been sponsored by the division during the last several years Other classes covering subjects such as soils classification, excavation and grading and landslides, which are often related to earthquakes, have also been sponsored.

BCD maintains a roster of persons qualified to inspect buildings following an earthquake. As part of this program, the division adopted rules establishing qualifications and training required to be registered as a post-earthquake damage inspector.

DEQ Emergency Response Program

DEQ's Emergency Response Program is designed to carry out legislative direction to work with other agencies and industry to prevent and respond to spills of oil and hazardous materials. Oil and hazardous material spills pose a major potential threat to Oregon's waters, air, land, and wildlife. Large volumes of oil move along the Columbia River and along the coast. Hazardous materials are shipped along the highways and by rail. DEQ works with other agencies and industry to prevent and respond to spills of these materials. The program also coordinates removal of drug lab materials which would otherwise present a risk to the public.

Office of State Fire Marshal – Conflagration Act

OSFM works in a collaborative role in helping to respond to WUI fire issues. As part of its fire prevention program, OSFM provides statewide standardization and technical assistance to local fire agencies and to communities with no structural fire protection. Coordination of structural firefighting resources occurs pursuant to the *Conflagration Act.* When directed by the Governor, the Act allows the State Fire Marshal to mobilize structural firefighting personnel and equipment, when a significant number of structures or lives are threatened by fire, and the local capacity to provide structural protection has been exhausted.

The *Conflagration Act* was established as a civil defense measure to provide a mechanism to mobilize structural fire suppression resources for massive urban fires. It was first used in 1959 to coordinate aid resulting from the explosion of a dynamite filled truck in downtown Roseburg. The Act was not invoked again until 1972, when a wildland fire in Yamhill County exceeded the capacity of local structural agencies to protect isolated structures and agricultural lands. Since then, the Act has been invoked more and more frequently – and nearly always for lightning caused wildfires threatening structures in the WUI. In the decade after 1977, the average number of declared conflagrations was about one per year. In the decade after 1987 (a record year) the average number of declarations per year more than doubled. Since 1998, the average has doubled again.

Under this law, only the Governor may invoke the Act to mobilize fire suppression resources from the across the state, but only if local resources, including what is available under mutual aid agreements, has first been fully committed. The increasing frequency of *Conflagration Act* utilization has caused funding concerns

and challenges because no dedicated funds are set aside for this purpose. Especially troubling is the increasing frequency and public expectation to use the Act to protect structures in communities having minimal or nonexistent structural protection. Since 2002, with onset of stronger mitigation efforts, *Community Wildfire Protection Plans* along with ODF's surge in initial attacks on wildfires threatening structures, the use of the Act has dropped significantly.

OPDR Post-Disaster Recovery Planning for Catastrophic Disasters

In collaboration with the Cascadia Region Earthquake Workgroup (CREW), the United States Geological Survey (USGS), the City of Cannon Beach, and Oregon Emergency Management, OPDR developed a pilot long-term catastrophic post-disaster recovery planning process in the City of Cannon Beach. [2006]

OPDR developed a Post-Disaster Recovery Planning Forum: How-To Guide for communities desiring a framework to identify redevelopment issues they will face after a disaster. [2007]

OPDR assisted Douglas County in obtaining over $250,000 in grant funding from the Federal Emergency Management Agency to develop long-term, catastrophic post-disaster recovery plans for Coos, Curry, Douglas, and Lane Counties. [2009 – 2011]

Local Capability Assessment

Local Mitigation Policies, Programs, and Capabilities

Comprehensive Land Use Planning

Comprehensive land use planning provides mechanisms to prevent development in hazardous areas or to allow development in a manner that minimizes damages resulting from the presence of natural hazards. In Oregon, land use plans inventory hazardous areas, assess risks associated with the hazards, and present options available to minimize future losses. Land use plans can be used to guide new development to a community's less hazardous areas. Additionally, they can identify opportunities for redevelopment projects that will improve hazard mitigation by adjusting current land uses, and by requiring up-to-date building codes and standards for rehabilitation of existing structures.

In Oregon, every city and county is covered by a "comprehensive plan" that includes the information, policies, and maps that guide community land use decisions. Comprehensive plans are formulated by planners with citizen input, and adopted by public bodies (planning commissions, city councils, and/or county boards). Each community's comprehensive plan is organized around nineteen statewide planning goals. Goal 7 specifically applies to natural hazards and calls for local comprehensive plans to include inventories, policies, and ordinances to guide development in hazard areas thereby reducing losses.

Oregon's statewide land use program requires local governments to adopt laws and ordinances to implement their comprehensive plans. In order to meet Goal 7 requirements, among others, the following measures may be administered by local planning and/or zoning agencies.

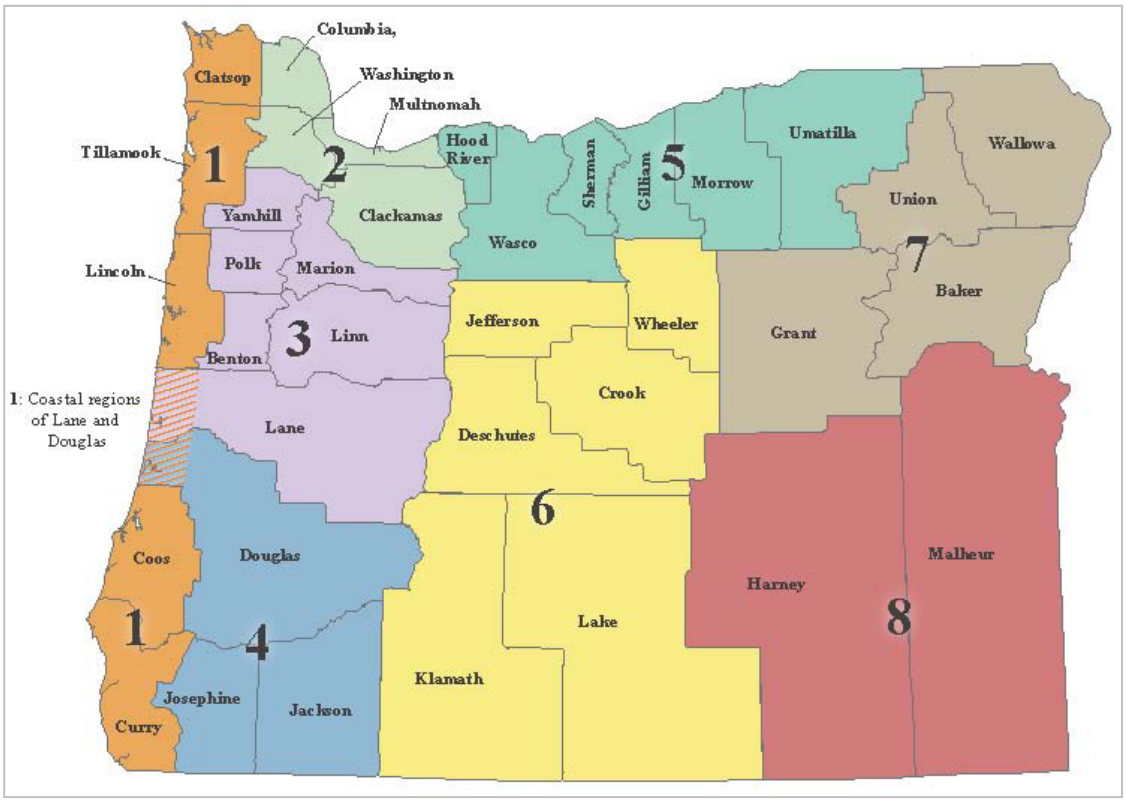
- Zoning: Laws and ordinances regulate development by dividing the community into zones or districts and by setting development criteria for each district. Zoning decisions may dedicate areas for public use, conservation, agriculture, etc. with the goal of compatible uses and acceptable risk.
- Subdivision Regulations: These regulations set construction and location standards for subdivision layout and infrastructure. A variety of measures can be used to mitigate hazards on subdivided areas.
- Protecting Critical Facilities: Because of their essential role in response and recovery, critical facilities are often a focus for hazard mitigation measures. Oregon has adopted specific requirements for construction of new critical facilities that require a site hazard analysis and prohibits their construction in tsunami zones.
- Open Space Preservation: Keeping a hazardous area free from development greatly reduces risk. Land use and capital improvement plans can identify areas to be preserved by acquisition and other means, such as purchasing easements or preserving wetlands.

Local Natural Hazards Mitigation Planning

In February 2002, the Federal Emergency Management Agency (FEMA) published Interim Final Rule 44 CFR Part 201, which required all states and local governments to develop natural hazards mitigation plans by November 1, 2003. This deadline was later extended to November 1, 2004 for local plans and May 1, 2005 for state plans. For local governments, the requirement only applies towards maintaining eligibility for certain FEMA hazard mitigation grant programs.

Local planning and mitigation requirements are accomplished in great measure through the state's Pre-Disaster Mitigation (PDM) program. The PDM planning program was established by OPDR and OEM in 2004, and it systematically provides funding and technical assistance to local governments for the purpose of developing or updating existing local natural hazards mitigation plans. Natural hazard mitigation planning occurs in partnership with the Department of Land Conservation and Development, the Department of Geology and Mineral Industries, FEMA Region X, and local governments throughout Oregon. Assistance is targeted annually to specific planning regions that are identified by Oregon Emergency Management (see figure below).

Figure 4.D.7. OEM Pre-Disaster Mitigation Planning Regions



Source: OEM

The state of Oregon maintains a set of benchmarks that evaluate progress toward Oregon's strategic vision that includes, among other components, caring, safe and engaged communities. One such benchmark includes a performance measure

that tracks the percentage of jurisdictions with hazard mitigation plans. This benchmark was instituted before FEMA's interim final rule on mitigation planning, and it continues to track and encourage natural hazards mitigation planning for all of Oregon's jurisdictions. Plans are tracked and inventoried at the county level (36 Oregon counties).

Table 4.D.6: Oregon Community Plan Status: Region 1

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 1	Clatsop	(Clatsop County)	Approved	10/22/2008	11/12/2008	11/12/2013	12,964
	Clatsop	Astoria	Approved	10/20/2008	11/12/2008	11/12/2013	9,477
	Clatsop	Cannon Beach	Approved	11/4/2008	11/12/2008	11/12/2013	1,690
	Clatsop	Gearhart	Approved	2/4/2009	5/8/2009	11/12/2013	1,462
	Clatsop	Seaside	-	-	-	-	6,457
	Clatsop	Warrenton	Approved	1/26/2010	2/16/2010	11/12/2013	4,989
						Total population	*37,039*
						Total approved population	*30,582*
						Percent approved population	*83%*
	Coos	(Coos County)	Approved	7/7/2010	8/27/2010	8/27/2015	25,547
	Coos	Bandon	-	-	-	-	3,066
	Coos	Coos Bay	Approved	-	5/18/2011	8/27/2015	15,967
	Coos	Coquille	-	-	-	-	3,866
	Coos	Lakeside	-	-	-	-	1,699
	Coos	Myrtle Point	Approved	-	7/13/2011	8/27/2015	2,514
	Coos	North Bend	Approved	-	11/15/2011	8/27/2015	9,695
	Coos	Powers	-	-	-	-	689
						Total population	*63,043*
						Total approved population	*53,723*
						Percent approved population	*85%*
	Curry	(Curry County)	Approved	-	9/1/2010	9/1/2015	12,642
	Curry	Brookings	Approved	-	3/9/2011	9/1/2015	6,336
	Curry	Gold Beach	Approved	-	2/14/2011	9/1/2015	2,253
	Curry	Port Orford	Approved	-	1/26/2011	9/1/2015	1,133
						Total population	*22,364*
						Total approved population	*22,364*
						Percent approved population	*100%*
	Lincoln	(Lincoln County)	Approved	6/30/2009	7/22/2009	7/22/2014	19,317
	Lincoln	Depoe Bay	Approved	9/1/2009	11/4/2009	7/22/2014	1,398
	Lincoln	Lincoln City	Approved	9/28/2009	11/4/2009	7/22/2014	7,930
	Lincoln	Newport	Approved	8/17/2009	11/4/2009	7/22/2014	9,989
	Lincoln	Siletz	Approved	8/13/2009	11/4/2009	7/22/2014	1,212
	Lincoln	Toledo	Approved	8/5/2009	11/4/2009	7/22/2014	3,465
	Lincoln	Waldport	Approved	10/8/2009	11/4/2009	7/22/2014	2,033
	Lincoln	Yachats	Approved	12/10/2009	1/13/2010	7/22/2014	690
						Total population	*46,034*
						Total approved population	*46,034*
						Percent approved population	*100%*
	Tillamook	(Tillamook County)	Pending	-	10/23/2006	10/23/2011	15,655
	Tillamook	Bay City	Pending	-	10/23/2006	10/23/2011	1,286
	Tillamook	Garibaldi	Pending	-	10/23/2006	10/23/2011	779
	Tillamook	Manzanita	Pending	-	10/23/2006	10/23/2011	598
	Tillamook	Nehalem	Pending	-	10/23/2006	10/23/2011	271
	Tillamook	Rockaway Beach	Pending	-	10/23/2006	10/23/2011	1,312
	Tillamook	Tillamook	Pending	-	10/23/2006	10/23/2011	4,935
	Tillamook	Wheeler	Pending	-	10/23/2006	10/23/2011	414
						Total population	*25,250*
						Total approved population	*25,250*
						Percent approved population	*100%*
						Total population - Region 1	**193,730**
						Total approved population - Region 1	**124,230**
						Percent approved population - Region 1	**64%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 2

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 2	Clackamas	(Clackamas County)	Approved	10/11/2007	10/19/2007	10/19/2012	170,561
	Clackamas	Barlow	-	-	-	-	165
	Clackamas	Canby	Approved	10/7/2009	-	10/19/2012	15,829
	Clackamas	Damascus	Approved	11/16/2009	-	10/19/2012	10,539
	Clackamas	Estacada	Approved	11/23/2009	-	10/19/2012	2,695
	Clackamas	Gladstone	Approved	2/9/2010	2/23/2010	10/19/2012	11,497
	Clackamas	Happy Valley	Approved	3/2/2010	-	10/19/2012	13,903
	Clackamas	Johnson City	Approved	12/21/2009	1/13/2010	10/19/2012	566
	Clackamas	Lake Oswego (also Mulnoh. Co.)	Approved	3/23/2010	4/8/2010	10/19/2012	34,066
	Clackamas	Milwaukie	Approved	6/16/2009	-	10/19/2012	20,291
	Clackamas	Molalla	Approved	8/25/2010	-	10/19/2012	8,108
	Clackamas	Oregon City	Approved	9/2/2009	-	10/19/2012	31,859
	Clackamas	Portland (also Mult. & Wash. Co.)	-	-	-	-	744
	Clackamas	Rivergrove (also Wash. Co.)	-	-	-	-	257
	Clackamas	Sandy	Approved	1/4/2010	1/13/2010	10/19/2012	9,570
	Clackamas	Tualatin (also Wash. Co.)	-	-	-	-	2,862
	Clackamas	West Linn	Approved	3/19/2008	3/19/2008	10/19/2012	25,109
	Clackamas	Wilsonville	Approved	3/9/2010	3/9/2010	10/19/2012	17,371
						Total population	*375,992*
						Total approved population	*371,964*
						Percent approved population	*99%*
	Columbia	(Columbia County)	Approved	6/30/2009	7/9/2009	7/9/2014	22,092
	Columbia	Clatskanie	Approved	8/19/2009	10/15/2009	7/9/2014	1,737
	Columbia	Columbia City	Approved	8/20/2009	10/15/2009	7/9/2014	1,946
	Columbia	Prescott	-	-	-	-	55
	Columbia	Rainier	Approved	8/3/2009	12/14/2009	7/9/2014	1,895
	Columbia	Scappoose	Approved	7/20/2009	10/15/2009	7/9/2014	6,592
	Columbia	St. Helens	Approved	7/15/2009	10/15/2009	7/9/2014	12,883
	Columbia	Vernonia	Approved	9/8/2009	10/15/2009	7/9/2014	2,151
						Total population	*49,351*
						Total approved population	*49,296*
						Percent approved population	*100%*
	Multnomah	(Multnohmah County)	Pending	8/3/2006	8/21/2006	8/21/2011	16,199
	Multnomah	Fairview	Pending	1/5/2011	1/26/2011	8/21/2011	8,920
	Multnomah	Gresham	Pending	1/16/2007	1/26/2007	8/21/2011	105,594
	Multnomah	Lake Oswego (also Clack. & Wash. Co.)	Approved	3/23/2010	4/8/2010	10/19/2012	2,544
	Multnomah	Maywood Park	-	-	-	-	752
	Multnomah	Portland (also Clack. & Wash. Co.)	Approved	12/15/2010	2/15/2011	2/15/2016	581,485
	Multnomah	Troutdale	Pending	12/14/2010	1/26/2011	8/21/2011	15,962
	Multnomah	Wood Village	Pending	12/14/2010	1/26/2011	8/21/2011	3,878
						Total population	*735,334*
						Total approved population	*734,582*
						Percent approved population	*100%*
	Washington	(Washington County)	Approved	1/18/2011	2/16/2011	2/16/2016	213,376
	Washington	Banks	-	-	-	-	1,777
	Washington	Beaverton	Approved	3/2/2011	3/9/2011	2/16/2016	89,803
	Washington	Cornelius	Approved	10/24/2011	1/10/2012	2/16/2016	11,869
	Washington	Durham	-	-	-	-	1,351
	Washington	Forest Grove	Approved	12/5/2011	1/10/2012	2/16/2016	21,083
	Washington	Gaston	-	-	-	-	635
	Washington	Hillsboro	Approved	4/30/2008	4/8/2008	2/16/2016	91,611
	Washington	King City	-	-	-	-	3,111
	Washington	Lake Oswego (also Clack. & Mult. Co.)	-	-	-	-	9
	Washington	North Plains	-	-	-	-	1,947
	Washington	Portland (also Clack. & Mult. Co.)	-	-	-	-	1,547
	Washington	Rivergrove (also Clack. Co.)	-	-	-	-	32
	Washington	Sherwood	-	-	-	-	18,194
	Washington	Tigard	Approved	8/12/2008	9/29/2008	2/16/2016	48,035
	Washington	Tualatin (also Clack. Co.)	-	-	-	-	23,192
	Washington	Wilsonville (also Clack. Co.)	-	-	-	-	2,138
						Total population	*529,710*
						Total approved population	*475,777*
						Percent approved population	*90%*
						Total population - Region 2	**1,690,387**
						Total approved population - Region 2	**1,631,619**
						Percent approved population - Region 2	**97%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 3

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 3	Benton	(Benton County)	Approved	1/4/2011	2/8/2011	2/8/2016	18,613
	Benton	Adair Village	Pending	-	-	-	840
	Benton	Albany (also Linn Co.)	Pending	-	-	-	6,463
	Benton	Corvallis	Pending	-	-	-	54,462
	Benton	Monroe	Pending	-	-	-	617
	Benton	Philomath	Pending	-	-	-	4,584
						Total population	*85,579*
						Total approved population	*85,579*
						Percent approved population	*100%*
	Lane	(Lane County)	Pending	9/20/2006	10/6/2006	10/6/2011	96,150
	Lane	Coburg	-	-	-	-	1,035
	Lane	Cottage Grove	Pending	12/19/2005	1/13/2006	1/13/2011	9,686
	Lane	Creswell	-	-	-	-	5,031
	Lane	Dunes City	-	-	-	-	1,303
	Lane	Eugene	Pending	11/23/2009			156,185
	Lane	Florence	-	-	-	-	8,466
	Lane	Junction City	-	-	-	-	5,392
	Lane	Lowell	-	-	-	-	1,045
	Lane	Oakridge	-	-	-	-	3,205
	Lane	Springfield	Pending	11/23/2009			59,403
	Lane	Veneta	-	-	-	-	4,561
	Lane	Westfir	-	-	-	-	253
						Total population	*351,715*
						Total approved population	*321,424*
						Percent approved population	*91%*
	Linn	(Linn County)	Approved	11/23/2010	12/29/2010	12/29/2015	35,738
	Linn	Albany (also Benton Co.)	Approved	-	12/29/2010	12/29/2015	43,695
	Linn	Brownsville	-	-	-	-	1,668
	Linn	Gates (also Marion Co.)	-	-	-	-	40
	Linn	Halsey	-	-	-	-	904
	Linn	Harrisburg	-	-	-	-	3,567
	Linn	Idanha (also Marion Co.)	-	-	-	-	57
	Linn	Lebanon	-	-	-	-	15,518
	Linn	Lyons	Approved		12/29/2010	12/29/2015	1,161
	Linn	Mill City (also Marion Co.)	-	-	-	-	1,531
	Linn	Millersburg	-	-	-	-	1,329
	Linn	Scio	Approved	-	12/29/2010	12/29/2015	838
	Linn	Sodaville	Approved	-	12/29/2010	12/29/2015	308
	Linn	Sweet Home	Approved	-	8/25/2009	8/25/2014	8,925
	Linn	Tangent	Approved	-	12/29/2010	12/29/2015	1,164
	Linn	Waterloo	-	-	-	-	229
						Total population	*116,672*
						Total approved population	*91,829*
						Percent approved population	*79%*

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 3 (continued)

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 3	Marion	(Marion County)	Approved	7/13/2011	7/18/2011	7/18/2016	83,664
	Marion	Aumsville	-	-	-	-	3,584
	Marion	Aurora	Pending	11/10/2009	12/14/2009	7/18/2016	918
	Marion	Detroit	-	-	-	-	202
	Marion	Donald	-	-	-	-	979
	Marion	Gates (also Linn Co.)	-	-	-	-	431
	Marion	Gervais	-	-	-	-	2,464
	Marion	Hubbard	-	-	-	-	3,173
	Marion	Idanho (also Linn Co.)	-	-	-	-	77
	Marion	Jefferson	-	-	-	-	3,098
	Marion	Keizer	Pending	12/7/2009	12/30/2009	7/18/2016	36,478
	Marion	Mill City (also Linn Co.)	-	-	-	-	324
	Marion	Mt. Angel	-	-	-	-	3,286
	Marion	Salem (also Polk Co.)	Approved	8/25/2008	9/5/2008	9/5/2013	130,398
	Marion	Scotts Mills	-	-	-	-	357
	Marion	Silverton	Pending	1/4/2010	1/8/2010	7/18/2016	9,222
	Marion	St Paul	-	-	-	-	421
	Marion	Stayton	-	-	-	-	7,644
	Marion	Sublimity	-	-	-	-	2,681
	Marion	Turner	-	-	-	-	1,854
	Marion	Woodburn	Pending	3/18/2010	4/8/2010	7/18/2016	24,080
						Total population	*315,335*
						Total approved population	*284,760*
						Percent approved population	*90%*
	Polk	(Polk County)	Approved	8/26/2009	10/14/2009	10/14/2014	16,665
	Polk	Dallas	Approved	9/21/2009	12/4/2009	10/14/2014	14,583
	Polk	Falls City	-	-	-	-	947
	Polk	Independence	Approved	7/28/2009	10/14/2009	10/14/2014	8,590
	Polk	Monmouth	Approved	11/3/2009	12/4/2009	10/14/2014	9,534
	Polk	Salem (also Marion Co.)	-	-	-	-	24,239
	Polk	Willamina (also Yamhill Co.)	-	-	-	-	845
						Total population	*75,403*
						Total approved population	*49,372*
						Percent approved population	*65%*
	Yamhill	(Yamhill County)	Approved	7/1/2009	7/17/2009	7/17/2014	23,546
	Yamhill	Amity	Approved	8/5/2009	10/15/2009	7/17/2014	1,614
	Yamhill	Carlton	Approved	8/10/2009	10/15/2009	7/18/2014	2,007
	Yamhill	Dayton	Approved	10/5/2009	12/4/2009	7/19/2014	2,534
	Yamhill	Dundee	Approved	8/18/2009	10/15/2009	7/20/2014	3,162
	Yamhill	Gaston	Approved	8/18/2009	10/15/2009	7/21/2014	2
	Yamhill	Lafayette	Approved	8/13/2009	10/15/2009	7/22/2014	3,742
	Yamhill	McMinnville	-	-	-	-	32,187
	Yamhill	Newberg	Approved	10/5/2009	12/4/2009	7/24/2014	22,068
	Yamhill	Sheridan	Approved	8/17/2009	10/15/2009	7/25/2014	6,127
	Yamhill	Willamina (also Polk Co.)	Approved	9/10/2009	12/4/2009	7/26/2014	1,180
	Yamhill	Yamhill	Approved	9/16/2009	10/15/2009	7/26/2014	1,024
						Total population	*99,193*
						Total approved population	*67,006*
						Percent approved population	*68%*
						Total population - Region 3	**1,043,897**
						Total approved population - Region 3	**899,970**
						Percent approved population - Region 3	**86%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 4

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 4	Douglas	(Douglas County)	Approved	4/21/2010	4/30/2010	4/30/2015	58,441
	Douglas	Canyonville	-	-	-	-	1,884
	Douglas	Drain	-	-	-	-	1,151
	Douglas	Elkton	-	-	-	-	195
	Douglas	Glendale	-	-	-	-	874
	Douglas	Myrtle Creek	-	-	-	-	3,439
	Douglas	Oakland	-	-	-	-	927
	Douglas	Reedsport	Approved	3/1/2010	4/30/2010	4/30/2015	4,154
	Douglas	Riddle	-	-	-	-	1,185
	Douglas	Roseburg	-	-	-	-	21,181
	Douglas	Sutherlin	-	-	-	-	7,810
	Douglas	Winston	-	-	-	-	5,379
	Douglas	Yoncalla	-	-	-	-	1,047
						Total population	*107,667*
						Total approved population	*62,595*
						Percent approved population	*58%*
	Jackson	(Jackson County)	Pending	1/31/2006	2/7/2006	2/7/2011	62,516
	Jackson	Ashland	Pending	-	-	-	20,078
	Jackson	Butte Falls	-	-	-	-	423
	Jackson	Central Point	Approved	10/27/2011	12/9/2011	12/9/2016	17,169
	Jackson	Eagle Point	Pending	-	-	-	8,469
	Jackson	Gold Hill	-	-	-	-	1,220
	Jackson	Jacksonville	-	-	-	-	2,785
	Jackson	Medford	Approved	9/16/2010	10/4/2010	10/4/2015	74,907
	Jackson	Phoenix	-	-	-	-	4,538
	Jackson	Rogue River	Pending	-	-	-	2,131
	Jackson	Shady Cove	Pending	-	-	-	2,904
	Jackson	Talent	-	-	-	-	6,066
						Total population	*203,206*
						Total approved population	*188,174*
						Percent approved population	*93%*
	Josephine	(Jospehine County)	Approved	-	1/10/2012	1/10/2017	46,297
	Josephine	Cave Junction	Lapsed	8/20/2004	9/30/2004	9/30/2009	1,883
	Josephine	Grants Pass	Pending	-	1/10/2012	1/10/2017	34,533
						Total population	*82,713*
						Total approved population	*80,830*
						Percent approved population	*98%*
						Total population - Region 4	**393,586**
						Total approved population - Region 4	**331,599**
						Percent approved population - Region 4	**84%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 5

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 5	Gilliam	(Gilliam County)	Approved	12/5/2007	5/28/2008	5/28/2013	582
	Gilliam	Arlington	Approved	3/13/2008	5/28/2008	5/28/2013	586
	Gilliam	Condon	Approved	12/5/2007	5/28/2008	5/28/2013	682
	Gilliam	Lonerock	Approved	1/9/2008	5/28/2008	5/28/2013	21
						Total population	*1,871*
						Total approved population	*1,871*
						Percent approved population	*100%*
	Hood River	(Hood River County)	Pending	1/1/2007	1/26/2007	1/26/2012	14,035
	Hood River	Cascade Locks	Pending	5/12/2008	6/27/2008	1/26/2012	1,144
	Hood River	Hood River	Pending	-	2/8/2008	1/26/2012	7,167
						Total population	*22,346*
						Total approved population	*22,346*
						Percent approved population	*100%*
	Morrow	(Morrow County)	Pending	-	12/15/2006	12/15/2011	4,269
	Morrow	Boardman	Pending	-	12/15/2006	12/15/2011	3,220
	Morrow	Heppner	Pending	-	12/15/2006	12/15/2011	1,291
	Morrow	Ione	Pending	-	12/15/2006	12/15/2011	329
	Morrow	Irrigon	Pending	-	12/15/2006	12/15/2011	1,826
	Morrow	Lexington	Pending	-	12/15/2006	12/15/2011	238
						Total population	*11,173*
						Total approved population	*11,173*
						Percent approved population	*100%*
	Sherman	(Sherman County)	Approved	12/5/2007	2/1/2008	2/1/2013	618
	Sherman	Grass Valley	Approved	1/7/2008	2/1/2008	2/1/2013	164
	Sherman	Moro	Approved	1/8/2008	2/1/2008	2/1/2013	324
	Sherman	Rufus	Approved	12/5/2007	2/1/2008	2/1/2013	249
	Sherman	Wasco	Approved	12/18/2007	2/1/2008	2/1/2013	410
						Total population	*1,765*
						Total approved population	*1,765*
						Percent approved population	*100%*
	Umatilla	(Umatilla County)	Approved	6/30/2009	7/9/2009	7/9/2014	21,819
	Umatilla	Adams	Approved	4/14/2009	7/9/2009	7/9/2014	350
	Umatilla	Athena	-	-	-	-	1,126
	Umatilla	Echo	-	-	-	-	699
	Umatilla	Helix	-	-	-	-	184
	Umatilla	Hermiston	-	-	-	-	16,745
	Umatilla	Milton-Freewater	-	-	-	-	7,050
	Umatilla	Pendleton	-	-	-	-	16,612
	Umatilla	Pilot Rock	Approved	2/16/2010	7/9/2009	7/9/2014	1,502
	Umatilla	Stanfield	-	-	-	-	2,043
	Umatilla	Ukiah	-	-	-	-	186
	Umatilla	Umatilla	Approved	12/1/2009	7/9/2009	7/9/2014	6,906
	Umatilla	Weston	-	-	-	-	667
						Total population	*75,889*
						Total approved population	*30,577*
						Percent approved population	*40%*
	Wasco	(Wasco County)	Pending	12/20/2006	12/12/2007	2/12/2012	10,056
	Wasco	Antelope	-	-	-	-	46
	Wasco	Dufer	-	-	-	-	604
	Wasco	Maupin	-	-	-	-	418
	Wasco	Mosier	-	-	-	-	433
	Wasco	Shaniko	-	-	-	-	36
	Wasco	The Dalles	Pending	11/13/2007	2/12/2007	2/12/2012	13,620
						Total population	*25,213*
						Total approved population	*23,676*
						Percent approved population	*94%*
						Total population - Region 5	**138,257**
						Total approved population - Region 5	**91,408**
						Percent approved population - Region 5	**66%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 6

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 6	Crook	(Crook County)	Approved	2/16/2011	3/14/2011	3/14/2016	11,725
	Crook	Prineville	Approved	3/8/2011	3/14/2011	3/14/2016	9,253
						Total population	*20,978*
						Total approved population	*20,978*
						Percent approved population	*100%*
	Deschutes	(Deschutes County)	Approved	4/28/2010	5/27/2010	5/27/2015	51,188
	Deschutes	Bend	-	-	-	-	76,639
	Deschutes	La Pine	-	-	-	-	1,653
	Deschutes	Redmond	-	-	-	-	26,215
	Deschutes	Sisters	-	-	-	-	2,038
						Total population	*157,733*
						Total approved population	*51,188*
						Percent approved population	*32%*
	Jefferson	(Jefferson County)	Approved	11/26/2008	12/16/2008	12/16/2013	13,607
	Jefferson	Culver	Approved	3/9/2009	3/12/2009	12/16/2013	1,357
	Jefferson	Madras	Approved	1/13/2009	3/12/2009	12/16/2013	6,046
	Jefferson	Metolius	Approved	11/3/2008	12/16/2008	12/16/2013	710
						Total population	*21,720*
						Total approved population	*21,720*
						Percent approved population	*100%*
	Klamath	(Klamath County)	Approved		11/15/2011	11/15/2016	42,742
	Klamath	Bonanza	-	-	-	-	415
	Klamath	Chiloquin	-	-	-	-	734
	Klamath	Klamath Falls	Approved		11/15/2011	11/15/2016	20,840
	Klamath	Malin	-	-	-	-	805
	Klamath	Merrill	-	-	-	-	844
						Total population	*66,380*
						Total approved population	*63,582*
						Percent approved population	*96%*
	Lake	(Lake County)	Approved	3/19/2008	6/17/2008	6/17/2013	5,358
	Lake	Lakeview	Approved	3/25/2008	6/17/2018	6/17/2013	2,294
	Lake	Paisley	Approved	5/6/2008	6/17/2008	6/17/2013	243
						Total population	*7,895*
						Total approved population	*7,895*
						Percent approved population	*100%*
	Wheeler	(Wheeler County)	Approved	2/20/2008	4/7/2008	4/7/2013	678
	Wheeler	Fossil	Approved	3/11/2008	4/7/2008	4/7/2013	473
	Wheeler	Mitchell	Approved	2/25/2008	4/7/2008	4/7/2013	130
	Wheeler	Spray	Approved	3/17/2008	4/7/2008	4/7/2013	160
						Total population	*1,441*
						Total approved population	*1,441*
						Percent approved population	*100%*
						Total population - Region 6	**276,147**
						Total approved population - Region 6	**166,804**
						Percent approved population - Region 6	**60%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 7

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 7	Baker	(Baker County)	Approved	6/18/2008	5/23/2008	5/23/2013	4,716
	Baker	Baker City	Approved	6/24/2008	5/23/2008	5/23/2013	9,828
	Baker	Greenhorn	-	-	-	-	-
	Baker	Haines	-	-	-	-	416
	Baker	Halfway	Approved	7/24/2008	5/23/2008	5/23/2013	288
	Baker	Huntington	-	-	-	-	440
	Baker	Richland	-	-	-	-	204
	Baker	Sumpter	-	-	-	-	171
	Baker	Unity	-	-	-	-	71
						Total population	*16,134*
						Total approved population	*14,832*
						Percent approved population	*92%*
	Grant	(Grant County)	Approved	4/23/2008	5/23/2008	5/23/2013	2,851
	Grant	Canyon City	-	-	-	-	703
	Grant	Dayville	-	-	-	-	149
	Grant	Granite	-	-	-	-	38
	Grant	John Day	Approved	5/13/2008	5/23/2008	5/23/2013	1,744
	Grant	Long Creek	-	-	-	-	197
	Grant	Monument	-	-	-	-	128
	Grant	Mt Vernon	-	-	-	-	527
	Grant	Prairie City	-	-	-	-	909
	Grant	Seneca	-	-	-	-	199
						Total population	*7,445*
						Total approved population	*4,595*
						Percent approved population	*62%*
	Union	(Union County)	Approved	6/11/2008	5/23/2008	5/23/2013	6,413
	Union	Cove	-	-	-	-	552
	Union	Elgin	-	-	-	-	1,711
	Union	Imbler	-	-	-	-	306
	Union	Island City	-	-	-	-	989
	Union	La Grande	Approved	9/17/2008	11/12/2008	5/23/2013	13,082
	Union	North Power	-	-	-	-	439
	Union	Summerville	-	-	-	-	135
	Union	Union	-	-	-	-	2,121
						Total population	*25,748*
						Total approved population	*19,495*
						Percent approved population	*76%*
	Wallowa	(Wallowa County)	Approved	7/7/2008	5/23/2008	5/23/2013	2,966
	Wallowa	Enterprise	-	-	-	-	1,940
	Wallowa	Joseph	-	-	-	-	1,081
	Wallowa	Lostine	-	-	-	-	213
	Wallowa	Wallowa	-	-	-	-	808
						Total population	*7,008*
						Total approved population	*2,966*
						Percent approved population	*42%*
						Total population - Region 7	**56,335**
						Total approved population - Region 7	**41,888**
						Percent approved population - Region 7	**74%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: Region 8

Region	County	City	NHMP Status	Local Approval Date	FEMA Approval Date	Expiration Date	2010 USA Census population
REGION 8	Harney	(Harney County)	Approved	2/6/2008	3/19/2008	3/19/2013	3,053
	Harney	Burns	Approved	2/13/2008	3/19/2008	3/19/2013	2,806
	Harney	Hines	Approved	2/12/2008	3/19/2008	3/19/2013	1,563
	Harney	Harney Electric Coop	Approved	1/22/2008	3/19/2008	3/19/2013	-
						Total population	*7,422*
						Total approved population	*7,422*
						Percent approved population	*100%*
	Malheur	(Malheur County)	Approved	6/25/2008	9/29/2008	9/29/2013	14,448
	Malheur	Adrain	Approved	7/31/2008	9/29/2008	9/29/2013	177
	Malheur	Jordan Valley	Approved	8/12/2008	9/29/2008	9/29/2013	181
	Malheur	Nysa	Approved	8/12/2008	9/29/2008	9/29/2013	3,267
	Malheur	Ontario	Approved	9/2/2008	9/29/2008	9/29/2013	11,366
	Malheur	Vale	Approved	6/24/2008	9/29/2008	9/29/2013	1,874
						Total population	*31,313*
						Total approved population	*31,313*
						Percent approved population	*100%*
						Total population - Region 8	**38,735**
						Total approved population - Region 8	**38,735**
						Percent approved population - Region 8	**100%**

Source: OEM and OPDR (current through 1/15/2012)

Table 4.D.6: Oregon Community Plan Status: All Regions

All Regions	Region 1	Total population	193,730
		Total approved population	124,230
		Percent approved population	64%
	Region 2	Total population	1,690,387
		Total approved population	1,631,619
		Percent approved population	97%
	Region 3	Total population	1,043,897
		Total approved population	899,970
		Percent approved population	86%
	Region 4	Total population	393,586
		Total approved population	331,599
		Percent approved population	84%
	Region 5	Total population	138,257
		Total approved population	91,408
		Percent approved population	66%
	Region 6	Total population	276,147
		Total approved population	166,804
		Percent approved population	60%
	Region 7	Total population	56,335
		Total approved population	41,888
		Percent approved population	74%
	Region 8	Total population	38,735
		Total approved population	38,735
		Percent approved population	100%
	All Oregon	**Total population**	**3,831,074**
		Total approved population	**3,326,253**
		Percent approved population	**87%**

Source: OEM and OPDR (current through 1/15/2012)

Note: cities are not automatically covered by county plans. Check with your local emergency manager to determine the status of your community's local mitigation planning efforts.

Capital Improvement Planning

Most communities may be indirectly addressing mitigation through their Capital Improvement Plans, specifically when obsolete infrastructure is rebuilt to current code. These efforts may not be seen by the community as mitigation, but by bringing the infrastructure/facilities up to code, they are reducing the vulnerability of those systems. More education is needed to make the connection between mitigation and capital improvement among the Public Works field in the state.

Erosion Control Management Plans

The Natural Resources Conservation Service (NRCS) and local soil and water conservation districts (SWCD) have long sought to reduce wind erosion of cropland. Farming practices commonly used in dryland cropping areas, such as reduced tillage and residue management, reflect this interest. However, occasionally after long periods with little or no precipitation any activities that disturb soil or reduce vegetation can lead to conditions conducive to dust storms.

Nationally, NRCS has developed quality criteria for wind erosion control practices and use a wind erosion equation model for predicting potential wind erosion under various farming systems.

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.

At this time, wind erosion control is a requirement under the Federal Farm Bill for certain commodities such as wheat and corn, but depending on the rotation, may not be a requirement for other commodities such as potatoes or vegetables. USDA-NRCS is generally responsible for these programs.

Wind erosion is ranked high among concerns for funding under the Environmental Quality Incentive Program, the current USDA cost-share program available to landowners.

Floodplain Management

Local floodplain programs are built upon statewide requirements for land use planning and implementation of building codes. Local governments implement flood damage prevention ordinances through floodplain development permits, and the state building codes via local building permits. Local governments are required by the state (Goal 7) to meet the minimum NFIP standards, and the state building codes – in some cases – require local governments to implement higher standards (e.g., elevation to one-foot above the base flood elevation). Many local governments in Oregon have also adopted higher regulatory standards into their flood damage prevention ordinances. For example, some jurisdictions require two or three feet of freeboard, regulate an area larger than the floodplain shown on FEMA FIRMs, require balanced cut/fill in the floodplain, etc.

Local governments are encouraged to join the NFIP Community Rating System (CRS), which is a federal program that provides incentives to local governments that implement floodplain measures that exceed the NFIP minimum requirements. The CRS also provides an important avenue for Oregon's NFIP communities to obtain recognition for their local floodplain programs. The CRS offers reduced insurance rates to property owners in jurisdictions that have received a CRS rating of 9 or lower because their flood management programs exceed the NFIP requirement. Currently, 31 of Oregon's NFIP communities participate in the CRS program. The state continues to work with ISO, FEMA Region 10, and Oregon's NFIP communities to educate local governments about the CRS program and to promote community participation.

Community Wildfire Protection Planning

A Community Wildfire Protection Plan (CWPP) is a plan developed by a community in an area at-risk from wildfire. The CWPP planning process is the collaboration between communities and agencies interested in reducing wildfire risk. A valid CWPP has three minimum requirements. First, the plan must be collaboratively developed by local and state government representatives in consultation with federal agencies and other interested parties. Second, the plan must identify and prioritize areas for hazardous fuel reduction treatments, as well as recommending methods of treatments that will protect at-risk communities and essential infrastructure. Third, the plan must recommend measures that homeowners and communities can take to reduce ignitability of structures throughout the area addressed by the plan.

The Healthy Forest Restoration Act (HFRA) requires that three decision-makers mutually agree to the final contents of the CWPP. The three are the applicable local government (i.e. counties or cities), the local fire department(s) and the state entity responsible for forest management (ODF). These three are directed to consult with and involve local representatives of the USFS and BLM and other interested parties or persons in the development of the CWPP.

The statutory definition of a CWPP appears in Title I of the Healthy Forest Restoration Act of 2003 (HFRA). The HRFA decrees that communities, which have a CWPP in place, will be a priority for receiving hazardous fuels reduction funding administrated by the USFS and BLM.

Local OEM Hazard Analyses

Developed by FEMA, and gradually refined by OEM, the OEM Hazard Analysis provides a methodology for local governments to conduct basic evaluations of jurisdictional risks to natural hazards. OEM's hazard analyses can serve as an early step in planning for hazard mitigation, response, and recovery. In connection with Emergency Management Performance Grant funding administered by OEM, there is a requirement that hazard analyses be current within ten years, and that they include a written synopsis (narrative) of the most credible events possible to occur within a jurisdiction. As such, all jurisdictions maintain fairly up-to-date hazard analyses that can be used for a wide variety of planning purposes. The majority of communities in Oregon consider these analyses in the development of local natural hazards mitigation plans.

The methodology produces hazard scores that range from 24 (lowest possible) to 240 (highest possible), on order of magnitude from lowest to highest. Vulnerability and probability are the two key components of the methodology. Vulnerability examines both typical and maximum credible events, and probability endeavors to reflect how physical changes in the jurisdiction and scientific research modify the historical record for each hazard. Vulnerability accounts for approximately 60% of the total score, and probability approximately 40%.

This method provides the jurisdiction with a sense of hazard priorities, or relative risk. It doesn't predict the occurrence of a particular hazard, but it does "quantify" the risk of one hazard compared with another. By doing this analysis, planning can first be focused where the risk is greatest.

Additionally, the hazard analysis can help establish priorities for planning, capability development, and hazard mitigation; serve as a tool in the identification of hazard mitigation measures; be one tool in conducting a hazard-based needs analysis; serve to educate the public and public officials about hazards and vulnerabilities; and help communities make objective judgments about acceptable risk.

Local Emergency Planning Committees

In 2986, the federal government established the Emergency Planning and Community Right to Know Act (EPCRA). The intent of this law was to give citizens the right to know what types of hazardous materials were in their communities, so they could be prepared to respond if a release occurred. Part of this law provided states with the opportunity to create Local Emergency Planning Committees (LEPCs). Local Emergency Planning Committees (LEPCs) work to understand chemical hazards in the community, develop emergency plans in case of an accidental release, and look for ways to prevent chemical accidents.

The Office of State Fire Marshal (OSFM) has created a State Emergency Response Commission Advisory Board, to help Oregon communities establish LEPCs and support them in their activities. The goal is to create a comprehensive statewide system of emergency preparedness beginning at the local level.

LEPC members include people from emergency management, police, fire, emergency medical services, transportation, health, broadcast and print media, industry, community groups, colleges, and the public. These are the same organizations that are typically involved in the development of local natural hazards mitigation plans. Through OPDR's plan development support, communities are encouraged to use existing communities (such as LEPCs) in the development and/or maintenance of their local natural hazards mitigation plans. Currently, there is one LEPC in Oregon, located in Salem, OR.

Local Fire Prevention Cooperatives

A wide range of community-based fire prevention efforts exist across Oregon. Many of these efforts are developed and implemented by local fire prevention cooperatives. Since the mid-1970s, fire prevention cooperatives have been highly

successful at the creation and delivery of cost effective fire prevention programs, developed to address specific local situations. Cooperatives multiply the effectiveness of community fire prevention efforts by identifying common needs among neighboring agencies, then developing a single, joint approach to addressing those needs. The cooperative concept recognizes that no single agency usually has the personnel, expertise, community recognition, or financial resources to develop, implement and deliver a comprehensive package of fire awareness, education and public safety needs for a local area. In addition to identifying, designing and implementing unique local programs, fire prevention cooperatives serve as highly effective distributors of materials and programs developed by others. One example is their increasing involvement in Wildfire Awareness Week programs.

Local Fire Departments and Fire Protection Districts

Most structural fire protection in Oregon is provided by city fire departments, rural fire protection districts, county special service districts, and commercial subscription based entities. Specialized agencies also provide structural protection, such as the Portland Airport Fire Department and the National Park Service. A variety of volunteer organizations also exist. In some locations, such as the area immediately west of Portland, structural fire agencies have complete responsibility for the prevention and suppression of all fires, both wildland and structural. Across much of the state, structural fire agencies and the ODF share jurisdiction in WUI areas. In some parts of Oregon, property owners may be subject to the protection, assessment and taxation of both a local structural fire agency and ODF. In such areas, the structural fire department and ODF jointly protect properties, with the fire departments focused on protecting improvements and ODF focused on protecting the forest resources. To facilitate this joint responsibility, mutual aid agreements signed by both the structural district/department and ODF typically provide up to 24 hours of non-reimbursed firefighting assistance for fires that threaten each others' protected property and resources.

Rangeland Fire Protection Associations

RFPAs are nonprofit, locally governed and operated landowner associations organized to provide fire protection on rangeland areas of eastern Oregon which lack both structural and wildland fire protection. State law provides for the formation of these associations under the authority of the Oregon Board of Forestry, with assistance from ODF. There are currently eight associations that collectively protect over 2.1 million acres of land in portions of seven counties. An additional three associations are in the official formation process and several other locales are considering formation. To encourage formation efforts and to assist such efforts, in 2006 ODF created a position to specifically work on RFPA issues. The 2007 Oregon Legislature also passed a bill which increased ODF's ability to assist associations with their training needs, equipment acquisitions, payment for liability insurance, and administrative costs.

Funding

Funding to help conduct mitigation planning or to implement hazard mitigation measures can come from a number of sources, which include local, state, or federal government and from citizens themselves. The funding can be in the form of grants that may or may not require matching funds as well as loans of different types. Prior to a disaster, grants and loans can be made available on a scheduled or special announcement basis. Following disasters, post-disaster grants and loans come from a number of sources when opportunities for mitigation are oftentimes best coupled with the recovery effort. Citizens themselves make significant contributions to mitigation projects including, oftentimes, matching grant funds or providing the full amount of funding from their own resources. An expanded listing of hazard mitigation funding programs is provided in Table 4.D.7 at the end of this section.

Federal Funding Sources Pre-Disaster

UNIFIED HAZARD MITIGATION ASSISTANCE (HMA)

With an increasing number of disasters nationwide and the escalating costs of recovery, pre-disaster hazard mitigation has received considerable attention as a method of reducing disaster costs before they are incurred. Pre-disaster mitigation programs that fit under the HMA "umbrella" are described as follows.

Pre-Disaster Mitigation Grant Program

Initially conceived as Project Impact in the mid-1990s, the Pre-Disaster Mitigation (PDM) Program was first offered to the states during federal fiscal year 2002. PDM was formally authorized by the Disaster Mitigation Act (DMA) of 2000. Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist states and local governments (to include Indian Tribal governments) in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. If applicants have been identified through the NFIP as having a Special Flood Hazard Area (a Flood Hazard Boundary Map or Flood Insurance Rate Map has been issued for their community), they must be participating in the National Flood Insurance Program (NFIP) to be eligible for the PDM program. In addition, the community must not be suspended or on probation from the NFIP.

Hazard mitigation planning, as codified at 44 CFR Part 201, establishes criteria for state and local hazard mitigation planning as authorized by the Disaster Mitigation Act (DMA) of 2000. After November 1, 2003, local governments and Indian Tribal governments applying for PDM funds through the states are required to have an approved local mitigation plan prior to the approval of PDM project grants. (In Oregon, tribal governments will apply for PDM funding directly from FEMA.) States are required to have an approved standard state mitigation plan in order to receive PDM funds for state or local mitigation projects after November 1, 2004. Therefore, development of state and local natural hazard mitigation plans is key to maintaining eligibility for PDM funding.

The first two years of the program offered states a set-aside amount to help fund state and local natural hazards mitigation planning and technical assistance in risk

assessment, plan development support, and benefit/cost analysis techniques. Beginning in federal fiscal year 2003, the program incrementally moved to a nationally competitive grant program for both planning and project implementation. In future fiscal years, the PDM program will likely be exclusively offered on a nationally competitive basis. PDM grants are offered on a 75% federal share with a required 25% non-federal match. The Disaster Resistant University initiative is also a component of the PDM Program.

Flood Mitigation Assistance Program

The overall goal of the Flood Mitigation Assistance (FMA) Program is to fund cost-effective measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other National Flood Insurance Program (NFIP) insurable structures. This specifically includes:

- reducing the number of repetitively or substantially damaged structures and the associated flood insurance claims;
- encouraging long-term, comprehensive hazard mitigation planning;
- responding to the needs of communities participating in the NFIP to expand their mitigation activities beyond floodplain development activities and permitting; and
- complementing other federal and state mitigation programs with similar, long-term mitigation goals.

There are three types of FMA Program grants:

- planning grants to assist the state and communities in developing flood mitigation plans;
- project grants to fund eligible flood mitigation projects that will greatly reduce or eliminate the risk of flood damage - “non-structural” hazard mitigation measures such as the elevation, relocation, or acquisition of flood-prone structures are encouraged; and
- technical assistance grants to help the state provide guidance to applicants in applying for the program or in implementing approved projects.

All FMA Program grants are offered on a cost-share basis requiring 25% non-federal match. Funding is provided on an annual basis to the state and is based on the total number of NFIP policies statewide. The Office of Emergency Management is the grantee for FMA Program grants; cities and counties are eligible applicants. Planning and project grant selection criteria are based largely on the total number of repetitive flood losses, i.e., those counties and cities with the most repetitive flood losses have the highest priority for receiving grant funding. Recent FEMA guidance on the FMA Program emphasizes that top candidates for mitigation are structures with four or more flood losses or multiple losses that exceed the value of the structure (i.e., repetitive losses) for which NFIP insurance coverage has been maintained.

Severe Repetitive Loss Grant Program

The Severe Repetitive Loss (SRL) Grant Program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108-264), which

amended the National Flood Insurance Act of 1968 to provide funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss (SRL) structures insured under the National Flood Insurance Program (NFIP).

Repetitive Flood Claims Grant Program

The Repetitive Flood Claims (RFC) Grant Program was also authorized by P.L. 108–264. Up to $10 million is available annually for FEMA to provide RFC funds to assist states and communities reduce flood damages to insured properties that have had one or more claims to the National Flood Insurance Program (NFIP). Via this Program, FEMA may contribute up to 100 percent of the total amount approved under the RFC Grant award to implement approved activities, if the applicant has demonstrated that the proposed activities cannot be funded under the Flood Mitigation Assistance (FMA) Program.

More information on the SRL and RFC programs can be found in Section 2, *Risk Assessment*, and the *Flood Hazard Chapter* of Section 3.

Federal Funding Sources Post-Disaster

Hazard Mitigation Grant Program

FEMA's Hazard Mitigation Grant Program (HMGP) was created in November 1988 under the authority of the Stafford Act, Section 404. The HMGP assists states and local governments to implement long-term hazard mitigation measures following a Presidential major disaster declaration. Initially, the federal cost-share for projects was established at 50%; however, in 1993 that portion was increased to 75% of a project's total eligible costs. Objectives of HMGP include:

- preventing loss of lives and property due to disasters;
- implementing state and local hazard mitigation plans;
- enabling mitigation measures to be implemented during immediate recovery from a disaster; and
- providing funding for previously identified mitigation measures that benefit the disaster area.

Effective November 2004, the state and its applicants must minimally have a FEMA-approved natural hazards mitigation plan (44 CFR Section 201) to qualify for HMGP funding. Eligible applicants for the HMGP are the same as for the Public Assistance Program (Stafford Act, Section 406):

- state and local governments (including special districts);
- certain private nonprofit organizations or institutions; and
- Native American nations and authorized organizations (in Oregon these entities have a direct relationship with FEMA and do not apply through the state).
- Homeowners and businesses, whose properties can benefit from hazard mitigation measures, cannot apply directly for HMGP funding, but rather must be represented by an eligible applicant, such as the city or county where their project is located.

HMGP activities are managed by the Office of Emergency Management as grantee. The state develops a program administrative plan, solicits applicant interest and project applications, establishes priorities and selection criteria, reviews and selects projects. FEMA reviews all projects submitted by the state, conducts the required environmental reviews and benefit/cost analyses, and approves projects for funding.

The amount of HMGP funding available to the state is calculated at 15% of the federal funds spent on FEMA Public Assistance and Human Services Programs (minus administrative expenses) for each disaster. When a state has a FEMA-approved *enhanced* state hazard mitigation plan (Section 201.5), the calculated amount of HMGP funding increases to 20% of the federal funds spent on FEMA Public Assistance and Human Services Programs.

HMGP allows the state to set-aside up to 5% of the total obligation for projects that are not specifically hazard mitigation, such as warning systems. Another set-aside of 7% of the total HMGP obligation can be earmarked to state and local naturals hazards mitigation planning.

Although HMGP project funding is intended for use in the disaster-declared counties, it can be, at the state's request, used in non-declared counties for eligible hazard mitigation projects.

Public Assistance Program

The FEMA Public Assistance Program (Stafford Act, Section 406), which is implemented in Oregon through OEM, has a component which provides funding for mitigation related to the damaged elements of eligible infrastructure during the repair process, i.e., the PA Program encourages its subgrantees that when they are doing repairs to infrastructure that was damaged by a Presidentially declared major disaster, and when cost-effective, a little additional money ought to be spent to make the damaged elements of the facility more disaster resistant to the next similar disaster event. Typically FEMA funds 75% of these additional costs with each subgrantee picking-up the non-federal cost share.

Physical Disaster Loan Program

When Physical Disaster Loans are made to homeowners and businesses following disaster declarations by the U.S. Small Business Administration (SBA), up to 20% of the loan amount can go toward specific measures taken to protect against recurring damage in similar future disasters.

Increased Cost of Compliance

The Standard Flood Insurance Policy has a provision that will pay the policy holder to comply with a state or local floodplain management law or ordinance affecting repair or reconstruction of a structure suffering flood damage. Mitigation activities eligible for payment are: elevation, floodproofing, relocation, or demolition (or any combination of these activities) of the structure. The private-party premium payments are considered non-federal match (cost share) as long as the claim is made within the timeframes allowed by the NFIP. In addition, if the ICC payment is being used as a sub-applicant's non-Federal cost share, the NFIP policy holder must assign the claim to the subapplicant.

Policyholders may receive up to $30,000 under this coverage. The structure must meet certain eligibility criteria, including a substantial damage or repetitive loss determination by a local official.

For more information, see:

http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/icc.shtm

State Funding Capabilities

Many factors contribute to a state's capability to fund hazard mitigation projects. For example, does the state maintain a mitigation contingency fund to implement projects in both pre- and post-disaster scenarios? In Oregon, the state does not have a statutory mitigation funding capability to pay for mitigation projects either in their entirety or to fulfill the non-federal matching requirement for federally-funded mitigation grants. It's not that mitigation is not important, but rather, it may not be high enough priority with many other programs competing for very limited general revenue funding. State agencies that identify mitigation projects must secure their own funding on a piecemeal basis when the need arises.

Mitigation projects that benefit local government (cities, counties, special districts) are funded by the local governments; the state does not traditionally provide funding for local mitigation projects neither in their entirety nor for the required non-federal match. Rather than being a deterrent for local project implementation, the lack of state funding creates an opportunity to develop highly competitive grant applications for federal funds particularly for the annual offerings of FEMA's Pre-Disaster Mitigation grant program. OEM works closely with local jurisdictions during their mitigation planning processes to consider and develop competitive project applications and routinely with local communities to consider top priority mitigation projects that are justified by strong benefit-cost ratios (highly cost effective).

Even though Oregon does not have an established mitigation funding capability, state and local governments are still able to implement mitigation projects that provide long-term benefits. Ultimately, all mitigation becomes local. This is largely a function of commitment to the measured benefits of mitigation and a community's desire to minimize disaster losses while maintaining a resilient economy. The local mitigation planning process is critical in developing a community's commitment to reducing disaster losses and is evident in communities that have embraced planning for the implementation of mitigation projects.

Oftentimes, mitigation opportunities can be identified in conjunction with other funding programs to achieve multi-objective benefits. For example, wetlands restoration projects or creating floodwater storage for environmental enhancements also have the collateral benefit of reducing flood losses to developed properties. For seismic retrofit projects, energy sustainability upgrades are frequently included as a project expense separate from the mitigation costs.

General Fund

Occasionally, state "General Fund" money pays for the labor costs of state officials who are working on mitigation projects for their agencies; these labor costs can sometimes be used as non-federal cost-share for projects that are otherwise federally funded. The state also occasionally contributes cash match through one of several funding mechanisms, i.e., portions of state agency budgets that are funded by a state source of revenue.

Seismic Rehabilitation Grant Program

The Seismic Rehabilitation Grant Program (SRGP) provides state funds to strengthen public schools and emergency services buildings so they will be less damaged during an earthquake. Reducing property damage, injuries, and casualties caused by earthquakes is the goal of the SRGP. For more information on the SRGP see *Senate Bill 3 (2005): Statewide Earthquake Rehabilitation Grant Program* beginning on Page 4-D-6 of this appendix.

Community Development Block Grant

Community Development Block Grants (CDBG) are made available to communities in the State of Oregon, usually via the Infrastructure Finance Authority with funding provided by the U.S. Department of Housing and Urban Development (HUD). While these grants originate with a federal agency, the funding is usually considered non-federal for matching grant purposes (i.e., CDBG can usually be utilized as non-federal match to other federal funding sources).

In 1981 Congress amended the Housing and Community Development Act of 1974 (HCD Act) to give each state the opportunity to administer CDBG funds for non-entitlement areas. These areas include those local governments that do not receive CDBG funds directly from HUD as part of the entitlement program (entitlement cities and urban counties). Non-entitlement areas are cities with populations of less than 50,000, and counties with populations of less than 200,000 although some entitlement cities have a population of less than 50,000 (cities that are designated central cities of metropolitan statistical areas).

The primary statutory objective of the CDBG Program is to develop viable communities by revitalizing neighborhoods, expanding affordable housing and economic opportunities, and improving community facilities and services, principally for persons of low and moderate income. The state must ensure that a specified percent of its CDBG grant funds are used for activities that benefit low and moderate-income persons over a three-year time period.

However, states may also use their funds to meet other urgent community development needs. A need is considered urgent if it poses a serious and immediate threat to the health or welfare of the community, has arisen in the past 18 months, and the project serves primarily low to moderate-income residents. For example, funds can be used as the non-federal match for eligible HMGP, PDM, and FMA Program projects.

In addition to CDBG funds made available to the state on an annual basis, special HUD funding can become available to the state as a result of natural disasters. This HUD assistance supplements assistance from FEMA and other federal

agencies. Traditionally, funds provided via HUD disaster recovery initiatives can be used for long-term recovery efforts, property acquisitions, relocations, and other efforts to reduce future damage. The program is intended to give communities flexibility in meeting local needs quickly. Unless restricted by regulation, these funds can also be used as non-federal, local match for eligible HMGP, PDM, and FMA Program projects.

Congressional supplemental appropriations provide HUD disaster funds. For example, in late 1998, funds were provided to address unmet disaster-related needs in communities affected by recent Presidentially declared disasters. Unmet needs were those that were not addressed by federal disaster relief and recovery programs following these declared disasters. OECDD (now IFA) was directed to administer these supplemental funds in Oregon for the Crook County and Prineville flood of May and June 1998. These particular HUD funds carried a requirement for other non-federal match.

Oregon Watershed Enhancement Board

Previously known as the Governor's Watershed Enhancement Board (GWEB), the Oregon Watershed Enhancement Board (OWEB) was created by the 1987 Oregon Legislature. OWEB is charged with supporting implementation of *The Oregon Plan for Salmon and Watersheds*, which includes the Oregon Coastal Salmon Restoration Initiative (OCSRI) and the Healthy Streams Partnership.

In 1995 the Legislature directed OWEB to provide support to watershed councils. OWEB directs a grant program through the Natural Resources Division of the Oregon Department of Agriculture by which each of the state's 45 soil and water conservation districts may apply for funds for watershed enhancement projects.

While OWEB's primary responsibilities are implementing projects addressing coastal salmon restoration and improving water quality statewide, these projects can sometimes also benefit efforts to reduce flood and landslide hazards. In addition, OWEB conducts watershed workshops for landowners, watershed councils, educators, and others, and conducts a biennial conference highlighting watershed efforts statewide.

Funding for OWEB programs comes from the general fund, state lottery, timber tax revenues, license plate revenues, angling license fees, and other sources. OWEB awards approximately $20 million in funding annually.

OWEB focuses on projects that approach natural resources management from a watershed perspective. OWEB encourages projects that foster interagency cooperation, include other sources of funding, provide for local stakeholder involvement, include youth and volunteers, and promote learning about watershed concepts.

Types of projects eligible for OWEB funding include:

- assessment and monitoring of natural resource conditions, such as compilation and analysis of existing watershed data and collection of new information, development of written action plans to address the resource

needs identified in a watershed assessment, and monitoring of resource conditions to determine changes over time;

- on-the-ground watershed management, such as planting along streambanks to slow erosion, developing off-stream livestock watering facilities or fencing stream areas to restore riparian function, controlling upland vegetation to encourage the growth of native grasses, re-seeding old logging roads, restoring or enhancing natural wetlands, improving fish habitat, removing or replacing ineffective culverts, and purchasing conservation easements or leasing water rights;
- opportunities for learning about watershed concepts, such as conducting workshops for landowners or educators, providing field study opportunities for students, engaging students in a program of water quality monitoring, and developing informational materials such as brochures, interpretive signs, and newsletters; and
- watershed council support such as salaries and benefits for council coordinators, materials used by the coordinator to conduct council business, and travel reimbursement.

Information about project eligibility and project evaluation criteria can be found in the grant application and guidebook available from OWEB. For more information, see:

http://www.oweb.state.or.us/

An expanded listing of hazard mitigation funding programs is provided in Table 4.D.7, below.

Table 4.D.7. Hazard Mitigation Funding Programs

Program Activity	Type of Assistance	Agency & Contact
Basic & Applied Research/Development		
Center for Integration of Natural Disaster Information	**Technical Assistance**: Develops and evaluates technology for information integration and dissemination	Department of Interior (**DOI**) –US Geological Survey (**USGS**) The Center for Integration of Natural Hazards Research: (703) 648-6059 hazinfo@usga.gov http://egsc.usgs.gov/isb/ pubs/factsheets/fs00301.html
Decision, Risk, and Management Science (DRMS) Program	**Funding** for research and related educational activities on risk, perception, communication, and management (primarily technological hazards)	**NSF** – Directorate for Social, Behavioral and Economic Science, Division of Social Behavioral and Economic Research, Decision, Risk, and Management Science Program (DRMS): (703) 292-7263 http://www.nsf.gov/funding/ pgm_summ.jsp?pims_id=5423
Societal Dimensions of Engineering, Science, and Technology Program	**Funding** for research and related educational activities on topics such as ethics, values, and the assessment, communication, management and perception of risk	**NSF** – Directorate for Social, Behavioral and Economic Science, Division of Social, Behavioral and Economic Research, Societal Dimensions of Engineering, Science and Technology Program: (703) 306-1743 http://www.nsf.gov/funding/ pgm_summ.jsp?pims_id=5323&org=NSF
National Earthquake Hazard Reduction Program (NEHRP) in Earth Sciences	**Research** into basic and applied earth and building sciences.	**NSF** – Directorate for Geosciences, Division of Earth Sciences: (703) 306-1550 http://www.nehrp.gov/index.htm
Technical and Planning Assistance		

Program Activity	Type of Assistance	Agency & Contact
Planning Assistance to States	**Technical and planning assistance** for the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources.	Department of Defense (**DOD**) US Army Corps of Engineers (**USACE**) Contact the Floodplain Management Staff in the Appropriate USACE Regional Office North Atlantic: (212) 264-7813 South Atlantic: (404) 331-4441 Great Lakes and Ohio River: (513) 684-6050 Mississippi Valley: (601) 634-5827 Northwestern: (503) 808-3853 Southwestern: (214) 767-2613 South Pacific: (415) 977-8164 Pacific Ocean: (808) 438-8863 http://www.usace.army.mil/cw/cecw-cp/library/pas.pdf
Disaster Mitigation Planning and Technical Assistance	**Technical and planning assistance** grants for capacity building and mitigation project activities focusing on creating disaster resistant jobs and workplaces.	Department of Commerce (**DOC**), Economic Development Administration (**EDA**): (800) 345-1222 **EDA**'s Disaster Recovery Coordinator: (202) 482-6225 http://www.eda.gov/AboutEDA/Programs.xml
Watershed Surveys and Planning	Surveys and planning studies fo r appraising water and related resources, and formulating alternative plans for conservation use and development. Grants and advisory/counseling services to assist w/ planning and implementation improvement.	US Department of Agriculture (**USDA**) – National Resources Conservation Service (**NRCS**) Watersheds and Wetlands Division: (202) 720-4527 Deputy Chief for Programs: (202) 690-0848 www.nrcs.usda.gov
National Flood Insurance Program	**Formula grants to States** to assist communities to comply with NFIP floodplain management requirements (Community Assistance Program).	FEMA http://www.fema.gov/business/nfip/
Emergency Management / Mitigation Training	**Training** in disaster mitigation, preparedness, planning.	FEMA http://www.fema.gov/about/training/emergency.shtm

Program Activity	Type of Assistance	Agency & Contact
National Dam Safety Program	**Technical assistance,** training, and grants to help improve State dam safety programs.	FEMA http://www.fema.gov/plan/ prevent/damfailure/ndsp.shtm
Volcano Hazards Program	**Technical assistance**: Volcano hazard warnings and operation of four volcano observatories to monitor and assess volcano hazard risk.	**DOI-USGS** Volcanic Hazards Program Coordinator: (703) 648-6708 (650) 329-5228 http://volcanoes.usgs.gov/
Floodplain Management Services	**Technical and planning assistance** at the local, regional, or national level needed to support effective floodplain management.	DOD-USACE North Atlantic: (212) 264-7813 South Atlantic: (404) 331-4441 Great Lakes and Ohio River: (513) 684-6050 Mississippi Valley: (601) 634-5827 Northwestern: (503) 808-3853 Southwestern: (214-767-2613 South Pacific: (415) 977-8164 Pacific Ocean: (808) 438-8863 http://www.usace.army.mil/cw/ cecw-cp/library/fpms.pdf
Watershed Protection and Flood Prevention Program	**Technical and financial assistance** for installing works of improvement to protect, develop, and utilize land or water resources in small watersheds under 250,000 acres.	USDA-NRCS Director, Watersheds and Wetlands Division: (202) 720-3042 (202) 690-4614 www.nrcs.usda.gov
Environmental Quality Incentives Program (EQIP)	**Technical**, educational, and limited **financial assistance** to encourage environmental enhancement.	**USDA-NRCS** NRCS County Offices Or NRCS EQUIP Program Manager: (202) 720-1834 www.nrcs.usda.gov
Partners for Fish & Wildlife Program	Provides financial and technical assistance to **private landowners** interested in restoring degraded wildlife habitat.	US Fish and Wildlife Service Pacific Region Coordinator 503-231-6179 http://ecos.fws.gov/partners /viewContent.do?viewPage=home
National Earthquake Hazard Reduction Program	**Technical and planning assistance** for activities associated with earthquake hazards mitigation.	**FEMA, DOI-USGS** Earthquake Program Coordinator: (703) 648-6785 http://www.nehrp.gov/

Program Activity	Type of Assistance	Agency & Contact
Hazard ID & Mapping		
National Flood Insurance Program: Flood Mapping	**Flood insurance rate maps** and flood plain management maps for all NFIP communities;	FEMA http://www.fema.gov/ business/nfip/
National Flood Insurance Program: Technical Mapping Advisory Council	**Technical guidance and advice** to coordinate FEMA's map modernization efforts for the National Flood Insurance Program.	DOI-USGS **USGS** – National Mapping Division: (573) 308-3802
National Digital Orthophoto Program	Develops **topographic quadrangles** for use in mapping of flood and other hazards.	DOI-USGS **USGS** – National Mapping Division: (573) 308-3802 http://www.ndop.gov/
Stream gauging and Flood Monitoring Network	Operation of a **network of over 7,000 stream gaging stations** that provide data on the flood characteristics of rivers.	DOE-USGS Chief, Office of Surface Water, USGS: (703) 648-5303 http://water.usgs.gov/wid/FS_209-95/mason-weiger.html
Mapping Standards Support	**Expertise in mapping and digital data** standards to support the National Flood Insurance Program.	DOI-USGS USGS – National Mapping Division: (573) 308-3802 http://edc2.usgs.gov/ pubslists/factsheets/fs17199.pdf
Soil Survey	**Maintains soil surveys** of counties or other areas to assist with farming, conservation, mitigation or related purposes.	USDA-NRCS NRCS – Deputy Chief for Soil Science and Resource Assessment: (202) 720-4630 http://tahoe.usgs.gov/files/ssurgo_database.pdf
National Earthquake Hazards Reduction Program	Seismic mapping for U.S.	DOI-USGS USGS Earthquake Program Coordinator: (703) 648-6785 http://www.nehrp.gov/

Program Activity	Type of Assistance	Agency & Contact
Project Support		
Aquatic Ecosystem Restoration	**Direct support** for carrying out aquatic ecosystem restoration projects that will improve the quality of the environment.	DOD-USACE Chief of Planning @ appropriate USACE Regional Office North Atlantic: (212) 264-7111 South Atlantic: (404) 331-4580 Great Lakes and Ohio River Chicago: (312) 886-5468 Cincinnati: (513) 684-3008 Mississippi Valley Division: (601) 634-7880 Northwestern Division Portland: (503) 808-3850 Omaha: (402) 697-2470 Southwestern Division: (214) 767- 2314 South Pacific Division: (415) 977-8171 Pacific Ocean Division: (808) 438-3850 http://www.aquatics.org/
Beneficial Uses of Dredged Materials	**Direct assistance** for projects that protect, restore, and create aquatic and ecologically-related habitats, including wetlands, in connection with dredging an authorized Federal navigation project.	DOD-USACE Same as above http://www.aquatics.org/
Wetlands Protection – Development Grants	**Grants** to support the development and enhancement of State and tribal wetlands protection programs.	US Environmental Protection Agency (**EPA**) EPA Wetlands Hotline: (800) 832- 7828 Or EPA Headquarters, Office of Water Chief, Wetlands Strategies and State Programs: (202) 260-6045 http://www.epa.gov/owow/ wetlands/initiative/#financial
Clean Water Act Section 319 Grants	**Grants to States** to implement nonpoint source programs, including support for non-structural watershed resource restoration activities.	EPA Office of Water Chief, Non-Point Source Control Branch: (202) 260-7088, 7100 http://www.epa.gov/nps/ cwact.html

Program Activity	Type of Assistance	Agency & Contact
Coastal Zone Management Program	**Grants** for planning and implementation of non-structural coastal flood and hurricane hazard mitigation projects and coastal wetlands restoration.	Department of Commerce **DOC** National Oceanic and Atmospheric Administration (**NOAA**) National Ocean Service Office of Ocean and Coastal Resource Management Chief, Coastal Programs Division: (301) 713-3102 http://coastalmanagement.noaa.gov/funding/welcome.html
Coastal Services Center Grant Opportunities	Formula and program enhancement grants for implementing and enhancing Coastal Zone Management programs that have been approved by the Secretary of Commerce.	National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center 843-740-1200 http://www.csc.noaa.gov/funding/
Coastal Wetlands Conservation Grant Program	Matching grants to **states** for acquisition, restoration, management or enhancement of coastal wetlands.	US Fish and Wildlife Service Oregon Coast Program Manager Newport, OR: 541-867-4558 http://ecos.fws.gov/coastal_grants/viewContent.do?viewPage=home
Partners for Fish & Wildlife Program	Provides financial and technical assistance to **private landowners** interested in restoring degraded wildlife habitat.	US Fish and Wildlife Service Pacific Region Coordinator 503-231-6179 http://ecos.fws.gov/partners/viewContent.do?viewPage=home
USACE Environmental Laboratory	Guidance for implementing environmental programs such as ecosystem restoration and reuse of dredged materials.	United States Army Corps of Engineers Environmental Laboratory, U.S. Army Engineer Research and Development Center EL-Inquiry@erdc.usace.army.mil http://el.erdc.usace.army.mil/index.cfm
Community Assistance and Protection Program	Mitigation/prevention, education, and outreach. National Fire Prevention and Education teams are sent to areas across the country at-risk for wildland fire to work with local residents.	Bureau of Land Management (BLM), Fire and Aviation See website for more information: http://www.blm.gov/nifc/st/en/prog/fire/community_assistance.1.html

Program Activity	Type of Assistance	Agency & Contact
Firewise Communities Program	Effort to involve homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts.	Firewise Communities 617-984-7486 http://www.firewise.org/
Title III Funds	Grants for projects that educate homeowners about wildfire mitigation efforts and projects which will increase the protection of people and property from wildfires	http://www2.ed.gov/programs/iduestitle3a/funding.html
Smith-Lever Special Needs Funding	Grants to State Extension Services at 1862 Land-Grant Institutions to support education-based approaches to addressing emergency preparedness and disasters.	**USDA** Assistant Administrator for Program and Analysis; Cooperative State Research, Education, & Extension Service; 202-690-0745 http://www.csrees.usda.gov/funding/rfas/smith_lever.html
National Fire Plan	Funding for organizing, training, and equipping fire districts through Volunteer, State and Rural Fire Assistance programs. Technical assistance for fire related mitigation.	**USDA-Forest Service**, National Fire Plan, Washington DC (202) 205-1332 http://www.forestsandrangelands.gov/
Rural Fire Assistance and Volunteer Fire Assistance Grants	Grants to fund to improve firefighter skills and to purchase needed equipment; priority areas are located in or adjacent to WUI areas.	Oregon Department of Forestry
FEMA's Assistance to Firefighter / Prevention and Safety Grants	Grants for apparatus and equipment purchases and to conduct training programs.	Oregon State Fire Marshall
Economic Action Program	Funds for preparation of Fire Safe plans to reduce fire hazards and utilize byproducts of fuels management activities in a value-added fashion.	USDA-Forest Service, Economic Action Coordinators, USDA Forest Service, Northwest Region: 503-808-2346 http://www.fs.fed.us/spf/coop/programs/eap/

Program Activity	Type of Assistance	Agency & Contact
Emergency Watershed Protection Support Services	Funds for public and private landowners to implement emergency measures in watersheds to relieve imminent hazards to life and property created by a natural disaster.	**USDA Natural Resources Conservation Service.** For assistance contact city and county governments, general improvement districts, conservation districts, or tribal governments to sponsor EWP project. http://www.nrcs.usda.gov/programs/ewp/
Watershed Protection and Flood Prevention Program	Funds for soil conservation; flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land.	USDA Natural Resources Conservation Service. For information, contact the local Farm Service Agency Natural Resources Conservation Service http://www.nrcs.usda.gov/programs/watershed/index.html
Disaster Assistance for State Units on Aging (SUAs)	Provide disaster relief funds to those SUAs and tribal organizations who are currently receiving a grant under Title VI of the Older Americans Act.	Administration on Aging. Washington DC: 202 619-0724 http://www.aoa.gov/
Forest Stewardship Program	Helps family forestland owners with hazard reduction training and funding to assist with thinning and other actions to reduce wildfire hazard.	**USDA – US Forest Service,** For more information contact local State Forester's Office http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml
National Tsunami Hazard Mitigation Program	Program provides tsunami modeling for preparedness planning, mitigation initiatives, and public education; provides warning guidance to local jurisdictions; and facilitates installation of all-hazard alert systems in coastal areas.	Coordinated by **NOAA**, **USGS,** and **FEMA**. For more information, see the following website: http://nthmp.tsunami.gov/#
Community Development Block Grant (CDBG) State Administered Program	**Grants to States** to develop viable communities (e.g., housing, a suitable living environment, expanded economic opportunities) in non-entitled areas, for low- and moderate income persons.	US Department of Housing and Urban Development **(HUD)** State CDBG Program Manager Or State and Small Cities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-3587 http://www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/

Program Activity	Type of Assistance	Agency & Contact
Community Development Block Grant Entitlement Communities Program	**Grants** to entitled cities and urban counties to develop viable communities (e.g., decent housing, a suitable living environment, expanded economic opportunities), principally for low- and moderate income persons.	HUD City and county applicants should call the Community Planning and Development staff of their appropriate HUD field office. As an alternative, they may call the Entitlement Communities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-1577, 3587 http://www.hud.gov/offices/cpd/communitydevelopment/programs/entitlement/
Emergency Watershed Protection Program	Provides **technical and financial assistance** for relief from imminent hazards in small watersheds, and to reduce vulnerability of life and property in small watershed areas damaged by severe natural hazard events.	USDA – NRCS National Office: (202) 690-0848 Watersheds and Wetlands Division: (202) 720-3042 http://www.nrcs.usda.gov/programs/EWP/index.html
Watershed Protection and Flood Prevention Program	Funds for soil conservation; flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land.	USDA Natural Resources Conservation Service. For information, contact the local Farm Service Agency Natural Resources Conservation Service http://www.nrcs.usda.gov/programs/watershed/index.html
Disaster Assistance for State Units on Aging (SUAs)	Provide disaster relief funds to those SUAs and tribal organizations who are currently receiving a grant under Title VI of the Older Americans Act.	Administration on Aging. Washington DC: 202 619-0724 http://www.aoa.gov/
Forest Stewardship Program	Helps family forestland owners with hazard reduction training and funding to assist with thinning and other actions to reduce wildfire hazard.	**USDA – US Forest Service,** For more information contact local State Forester's Office http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml

Program Activity	Type of Assistance	Agency & Contact
National Tsunami Hazard Mitigation Program	Program provides tsunami modeling for preparedness planning, mitigation initiatives, and public education; provides warning guidance to local jurisdictions; and facilitates installation of all-hazard alert systems in coastal areas.	Coordinated by **NOAA**, **USGS,** and **FEMA**. For more information, see the following website: http://nthmp.tsunami.gov/#
Community Development Block Grant (CDBG) State Administered Program	**Grants to States** to develop viable communities (e.g., housing, a suitable living environment, expanded economic opportunities) in non-entitled areas, for low- and moderate income persons.	US Department of Housing and Urban Development **(HUD)** State CDBG Program Manager Or State and Small Cities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-3587 http://www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/
Community Development Block Grant Entitlement Communities Program	**Grants** to entitled cities and urban counties to develop viable communities (e.g., decent housing, a suitable living environment, expanded economic opportunities), principally for low- and moderate income persons.	HUD City and county applicants should call the Community Planning and Development staff of their appropriate HUD field office. As an alternative, they may call the Entitlement Communities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-1577, 3587 http://www.hud.gov/offices/cpd/communitydevelopment/programs/entitlement/
Emergency Watershed Protection Program	Provides **technical and financial assistance** for relief from imminent hazards in small watersheds, and to reduce vulnerability of life and property in small watershed areas damaged by severe natural hazard events.	USDA – NRCS National Office: (202) 690-0848 Watersheds and Wetlands Division: (202) 720-3042 http://www.nrcs.usda.gov/programs/EWP/index.html

Program Activity	Type of Assistance	Agency & Contact
Rural Development Assistance -- Utilities	Direct and guaranteed rural economic **loans and business enterprise grants** to address utility issues and development needs.	**USDA**-Rural Utilities Service (RUS) Program Support: (202) 720-1382 Northern Regional Division: (202) 720-1402 Electric Staff Division: (202) 720-1900 Power Supply Division: (202) 720-6436 http://www.usda.gov/rus/
Rural Development Assistance – Housing	Grants, loans, and technical **assistance** in addressing rehabilitation, health and safety needs in primarily low-income rural areas. Declaration of major disaster necessary.	**USDA**-Rural Housing Service (RHS) Community Programs: (202) 720-1502 Single Family Housing: (202) 720-3773 Multi Family Housing: (202) 720-5177 http://www.rurdev.usda.gov/rhs/
Project Impact: Building Disaster Resistant Communities	**Funding and technical assistance** to communities and States to implement a sustained pre-disaster mitigation program.	FEMA
Flood Mitigation Assistance (FMA)	**Grants to States and communities** for pre-disaster mitigation to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program.	FEMA http://www.fema.gov/government/grant/fma/index.shtm
Repetitive Flood Claims Program	Assists **States** and **communities** reduce flood damages to insured properties that have had one or more claims to the National Flood Insurance Program (NFIP)	FEMA http://www.fema.gov/government/grant/rfc/index.shtm
Severe Repetitive Loss Program	**Grants to States** to reduce or eliminate the long-term risk of flood damage to severe repetitive loss (SRL) structures insured under the National Flood Insurance Program (NFIP).	FEMA http://www.fema.gov/government/grant/srl/index.shtm

Program Activity	Type of Assistance	Agency & Contact
Hazard Mitigation Grant Program (HMGP)	**Grants to States and communities** for implementing long-term hazard mitigation measures following a major disaster declaration.	FEMA http://www.fema.gov/ government/grant/hmgp/index.shtm
Public Assistance Program (Infrastructure)	**Grants to States and communities** to repair damaged infrastructure and public facilities, and help restore government or government-related services. Mitigation funding is available for work related to damaged components of the eligible building or structure.	FEMA http://www.fema.gov/plan /ehp/noma/projects2.shtm
National Flood Insurance Program (NFIP)	Makes available **flood insurance** to residents of communities that adopt and enforce minimum floodplain management requirements.	FEMA http://www.fema.gov /business/nfip/
HOME Investments Partnerships Program	**Grants to States, local government** and consortia for permanent and transitional housing (including support for property acquisition and rehabilitation) for low-income persons.	HUD Community Planning and Development, Grant Programs, Office of Affordable Housing, HOME Investment Partnership Programs: (202) 708-2685 (202) 708 0614 ext. 4594 1-800-998-9999 http://www.hud.gov/offices/cpd/ affordablehousing/programs/home/
Disaster Recovery Assistance	**Grants** to fund gaps in available recovery assistance after disasters (including mitigation).	HUD Community Planning and Development Divisions in their respective HUD field offices or HUD Community Planning and Development: (202) 708-2605 http://www.hud.gov/offices/cpd/ communitydevelopment/programs/ dri/assistance.cfm

Program Activity	Type of Assistance	Agency & Contact
Non-Structural Alternatives to Structural Rehabilitation of Damaged Flood Control Works	**Direct planning and construction grants** for non-structural alternatives to the structural rehabilitation of flood control works damaged in floods or coastal storms. $9 million FY99.	DOD-USACE Emergency Management contact in respective **USACE** field office: North Atlantic: (718) 491-8735 South Atlantic: (404) 331-6795 Great Lakes and Ohio River: (513) 684-3086 Mississippi Valley: (601) 634-7304 Northwestern: (503) 808-3903 Southwestern: (214) 767-2425 South Pacific: (415) 977-8054 Pacific Ocean: (808) 438-1673
Partners for Fish and Wildlife	**Financial and technical assistance** to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats.	Department of Interior (**DOI**) – Fish and Wildlife Service (**FWS**) National Coordinator, Ecological Services: (703) 358-2201 A list of State and Regional contacts is available from the National Coordinator upon request. http://www.fws.gov/partners/
Project Modifications for Improvement of the Environment	Provides for **ecosystem restoration** by modifying structures and/or operations or water resources projects constructed by the USACE, or restoring areas where a USACE project contributed to the degradation of an area.	DOD-USACE Chief of Planning @ appropriate USACE Regional Office North Atlantic: (212) 264-7111 South Atlantic: (404) 331-6270 Great Lakes and Ohio River Chicago: (312) 886-5468 Cincinnati: (513) 684-3008 Mississippi Valley Division: (601) 634-5762 Northwestern Division Portland: (503) 808-3850 Omaha: (402) 697-2470 Southwestern Division: (214) 767-2310 South Pacific Division: (415) 977-8171 Pacific Ocean Division: (808) 438-8880 http://www.nab.usace.army.mil/ whatwedo/civwks/CAP/1135.pdf

Program Activity	Type of Assistance	Agency & Contact
Post-Disaster Economic Recovery Grants and Assistance	**Grant funding** to assist with the long-term economic recovery of communities, industries, and firms adversely impacted by disasters.	Department of Commerce (**DOC**) – Economic Development Administration (**EDA**) EDA Headquarters Disaster Recovery Coordinator: (202) 482-6225 http://www.eda.gov/AboutEDA/Programs.xml
Public Housing Modernization Reserve for Disasters and Emergencies	**Funding** to public housing agencies for modernization needs resulting from natural disasters (including elevation, floodproofing, and retrofit).	HUD Director, Office of Capital Improvements: (202) 708-1640 http://www.hud.gov/
Indian Housing Assistance (Housing Improvement Program)	**Project grants and technical assistance** to substantially eliminate sub-standard Indian housing.	Department of Interior (**DOI**)-Bureau of Indian Affairs (**BIA**) Division of Housing Assistance, Office of Tribal Services: (202) 208-5427 http://www.hud.gov/offices/pih/
Land Protection	**Technical assistance** for run-off retardation and soil erosion prevention to reduce hazards to life and property.	USDA-NRCS Applicants should contact the National NRCS office: (202) 720-4527 http://www.nrcs.usda.gov/programs/frpp/
North American Wetland Conservation Fund	**Cost-share grants** to stimulate public/private partnerships for the protection, restoration and management of wetland habitats.	DOI-FWS North American Waterfowl and Wetlands Office: (703) 358-1784 http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm
Land Acquisition	**Acquires or purchases easements** on high-quality lands and waters for inclusion into the National Wildlife Refuge System.	DOI-FWS Division of Realty, National Coordinator: (703) 358-1713 http://www.fws.gov/realty/lap.html
Federal Land Transfer / Federal Land to Parks Program	Identifies, assesses, and transfers available Federal real property for acquisition for State and local parks and recreation, such as open space.	DOI-NPS General Services Administration Offices Fort Worth, TX: (817) 334-2331 Boston, MA: (617) 835-5700 Or Federal Lands to Parks Leader **NPS** National Office: (202) 565-1184 http://www.nps.gov/flp/

Program Activity	Type of Assistance	Agency & Contact
Wetlands Reserve Program	**Financial and technical assistance** to protect and restore wetlands through easements and restoration agreements.	USDA-NRCS National Policy Coordinator NRCS Watersheds and Wetlands Division: (202) 720-3042 http://www.nrcs.usda.gov/Programs/WRP/
Transfers of Inventory Farm Properties to Federal and State Agencies for Conservation Purposes	Transfers title of certain inventory farm properties owned by FSA to Federal and State agencies for **conservation** purposes (including the restoration of wetlands and floodplain areas to reduce future flood potential)	US Department of Agriculture (**USDA**) – Farm Service Agency (**FSA**) Farm Loan Programs National Office: (202) 720-3467, 1632 http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=landing
Financing and Loan Guarantees		
Physical Disaster Loans and Economic Injury Disaster Loans	**Disaster loans** to non-farm, private sector owners of disaster damaged property for uninsured losses. Loans can be increased by up to 20 percent for mitigation purposes.	Small Business Administration (**SBA**) National Headquarters Associate Administrator for Disaster Assistance: (202) 205-6734 http://www.sba.gov/services/disasterassistance/
Conservation Contracts	**Debt reduction** for delinquent and non-delinquent borrowers in exchange for conservation contracts placed on environmentally sensitive real property that secures FSA loans.	USDA-FSA Farm Loan Programs FSA National Office: (202) 720-3467, 1632 or local FSA office http://www.fsa.usda.gov/FSA/webapp?area=home&subject=fmlp&topic=landing
Clean Water State Revolving Funds	**Loans** at actual or below-market interest rates to help build, repair, relocate, or replace wastewater treatment plants.	EPA EPA Office of Water State Revolving Fund Branch Branch Chief: (202) 260-7359 A list of Regional Offices is available upon request http://www.epa.gov/owm/cwfinance/cwsrf/

Program Activity	Type of Assistance	Agency & Contact
Section 108 Loan Guarantee Program	**Loan guarantees** to public entities for community and economic development (including mitigation measures).	HUD Community Planning and Development staff at appropriate HUD field office, or the Section 108 Office in HUD Headquarters: (202) 708-1871 http://www.hud.gov/offices/cpd/communitydevelopment/programs/108/
Section 504 Loans for Housing	**Repair loans, grants and technical assistance** to very low-income senior homeowners living in rural areas to repair their homes and remove health and safety hazards.	US Department of Agriculture (**USDA**) – Rural Housing Service (**RHS**) Contact local RHS Field Office, or RHS Headquarters, Director, Single Family Housing Direct Loan Division: (202) 720-1474 http://www.rurdev.usda.gov/ga/trh504.htm
Section 502 Loan and Guaranteed Loan Program	Provides **loans, loan guarantees, and technical assistance** to very low and low-income applicants to purchase, build, or rehabilitate a home in a rural area.	USDA-RHS Contact the Local RHS Field Office, or the Director, Single Family Housing Guaranteed Loan Division, RHS: (202) 720-1452 http://www.rurdev.usda.gov/rhs/sfh/brief_rhguar.htm
Community Facilities Direct Loan Program, Guaranteed Loan Program, and Grant Program	Funding available to **public entities, non-profit corporations,** and **tribal government** to develop essential community facilities in rural areas and towns of up to 20,000 in population.	USDA Contact local Rural Development Housing offices in State for more information. http://www.rurdev.usda.gov/rhs/cf/cp.htm
Rural Development Assistance – Utilities	Direct and guaranteed **rural economic loans and business enterprise grants** to address utility issues and development needs.	**USDA**-Rural Utility Service (**RUS**) Contact Rural Development Field Offices, or RHS, Deputy Administrator, Community Programs Division: (202) 720-1490 http://www.usda.gov/rus/

Program Activity	Type of Assistance	Agency & Contact
Farm Service Agency Disaster Assistance Programs	Emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland and livestock damaged by natural disasters.	USDA-FSA Contact State Farm Service Agency Office for assistance or visit the following website: http://www.fsa.usda.gov/FSA/webapp?area=home&subject=diap&topic=landing
Farm Ownership Loans	**Direct loans, guaranteed / insured loans, and technical assistance** to farmers so that they may develop, construct, improve, or repair farm homes, farms, and service buildings, and to make other necessary improvements.	USDA-FSA Director, Farm Programs Loan Making Division, FSA: (202) 720-1632 http://www.fsa.usda.gov/FSA/webapp?area=home&subject=fmlp&topic=landing

Source: OPDR