

Volume III: City Addendum City of Gearhart, Oregon

Natural Hazard Mitigation Plan

The City of Gearhart developed this addendum to the Clatsop County Multi-jurisdictional Natural Hazards Mitigation Plan in an effort to increase the community's resilience to natural hazards. The addendum focuses on the natural hazards that could affect the City of Gearhart, Oregon, which include Coastal Erosion, Drought, Dust Storms, El Nino / La Nina, Earthquake, Flood, Fire and Wildland Interface, Landslide, Debris Flows, Tsunamis, Volcanic Hazards, Windstorms, and Winter Storms. It is impossible to predict exactly when disasters may occur, or the extent to which they will affect the City. However, with careful planning and collaboration among public agencies, private sector organizations, and citizens within the community, it is possible to minimize the losses that can result from natural hazards.

The addendum provides a set of actions that aim to reduce the risks posed by natural hazards through education and outreach programs, the development of partnerships, and the implementation of preventative activities such as land use and watershed management programs. The actions described in the addendum are intended to be implemented through existing plans and programs within the City.

The steps included in this natural hazard mitigation plan include:

- (1) Adoption by the Local Governing Body: By Resolution after approval date
- (2) Multi-jurisdiction plan adoption: By Resolution after approval date
- (3) Documentation of Multi-jurisdiction Plan Participation
- (4) Documentation of the Local Planning Process
- (5) Identifying Hazards that can affect the jurisdiction;
- (6) Profiling Hazards and Events that can and have affected the jurisdiction
- (7) Assessing Vulnerability: Identifying Assets and community hazard impacts
- (8) Assessing Vulnerability: Identifying Potential Losses (Confidential data)
- (9) Assessing Vulnerability: Analyzing Development Trends
- (10) Multi-Jurisdictional Risk Assessment: Assessing local risks
- (11) Local Hazard Mitigation Goals
- (12) Identification and Analysis of Mitigation Measures: Gearhart Action Items
- (13) Implementation of Mitigation Measures: Prioritization, Implementation, and Administration of Action Items using a cost-benefit analysis
- (14) Multi-Jurisdictional Mitigation Strategy: Specific Action Items are included in Section 12
- (15) Monitoring, Evaluating, and Updating the Plan: Five-year cycle update schedule
- (16) Implementation through Existing Programs: Mitigation incorporated into plans
- (17) Continued Public Involvement: How to ensure continued public participation

City of Gearhart Natural Hazard Mitigation Plan

1. Adoption by the Local Governing Body:

Documentation that the plan has been formally adopted by the governing body

_____ : The City of Gearhart will adopt the Gearhart Natural Hazard Mitigation Plan by Resolution when FEMA determines that the Plan is complete. The City will submit this documentation of adoption to OEM and FEMA.

2. Multi-jurisdiction plan adoption:

Documentation that the plan has been formally adopted by the governing body

_____ : The City of Gearhart will adopt the Clatsop County Multi-Jurisdiction Natural Hazard Mitigation Plan by Resolution when FEMA determines that the Plan is complete. The City will submit this documentation of adoption to OEM and FEMA.

How the Gearhart Addendum was developed:

3. Documentation of Multi-jurisdiction Plan Participation

Documentation of participation in the multi-jurisdiction plan development

Fall 2006 Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon (UO) Community Service Center partners with Oregon Emergency Management (OEM) and Clatsop County to develop a Pre-Disaster Mitigation Planning Grant to develop a Natural Hazard Mitigation Plan.

Clatsop County Commissioners sign a Memorandum of Understanding for this project.

Grant awarded by OEM

Fall 2007 The Clatsop County Sheriff Emergency Services Department hires Columbia River Estuary Study Taskforce (CREST) to facilitate the development of a Multi-jurisdiction Natural Hazard Mitigation Plan for County and City.

The Clatsop County multi-jurisdiction Natural Hazard Mitigation Plan Steering Committee is established.

Steering Committee Role:

- Coordinate Local Plan Development with section for Multi-jurisdiction Plan
- Organize internal meetings
- Organize public involvement
- Meet with Steering Committee
- Plan and information published at website: www.oregonshowcase.org

April 16, 2008: Mission Statement developed:
"To create a disaster resilient Clatsop County"

Public Events

January 11, 16, 17: Daily Astorian publishes media announcement of process

February 12, 2008 City of Seaside holds Open for Business Workshop: Property protection and disaster planning

April 30, 2008: City of Seaside Civic and Convention Center: Emergency Preparedness Fair

May 1, 2008: Public Meeting at Clatsop Community College Performing Arts Center to answer questions about the process.

Steering Committee Meetings

- November 15, 2007: The Steering Committee met to discuss purpose and outcomes of process answering questions about what is mitigation, why it is important, the role of the steering committee, the plan mission and goals, the public involvement strategy, to review the state community profiles, and to approve a memorandum of understanding to participate in the process.
- February 14, 2008: The Steering Committee met at Bob Chisholm Community Center in Seaside to draft community profile, hazard plans, and city addendums, to review maps, to develop stakeholder lists, and to plan public forums.
- April 16, 2008: The Steering Committee met in the Warrenton City Hall City Commissioners Room to finalize the mission statement, to finalize the plan goals, to develop the initial list of mitigation items for the County Plan, to meet with each of the city representatives to discuss addendum plan progress.
- August 7, 2008 The Steering Committee met to present and prioritize mitigation action items; discuss finalization of the County Plan and City Addendums. The Steering Committee decides that biannual meetings will be held in May and November of each year. The next update to each Local Plan is due five years from the date the County Plan is approved.

Steering Committee Schedule:

- Biannual Meetings: In November and May of each year, the Steering Committee members will meet to coordinate action item priorities. Stakeholder meeting dates and events will be planned at these meetings.
- Five Year Update: An update to the Local Plan is due five years from the date the County Plan is approved.

Clatsop County Multi-Jurisdiction Hazard Mitigation Plan

Steering Committee Members

#	Organization	Name	Phone Number	Email
1	CREST	Jay Flint (Coastal Planner)	(503) 325-0435	jflint@columbiaestuary.org
2	Clatsop County EMS	Gene Strong (EMS Coordinator)	(503) 325-8635	gstrong@co.clatsop.or.us
3	Clatsop County Development Director	Patrick Wingard (Lead Planner) / Jennifer Bunch: GIS	(503) 325-8611	pwingard@co.clatsop.or.us
4	CC Elected / Appointed Official	Bruce Francis (County Planning Chair)	(503) 325-8611	minurinuray@hotmail.com
5	County Public Health	Margo Lalich (Preparedness Coordinator)	(503) 325-8500 (extension 1913)	Mlalich@clatsop.co.or.us
6	City of Astoria	Brett Estes Development Director	(503) 338-5183	bestes@astoriaor.us
7	City of Warrenton	Carol Parker (Planning Director) Pamela Alegria	(503) 861-0920	Planningdirector@ci.warrenton.or.us
8	City of Seaside	Kevin Cupples (Planning Director)	(503) 738-7100	kcupples@cityofseaside.us
9	City of Cannon Beach	Richard Mays (City Manager)	(503) 436-1581 x.118	mays@ci.cannon-beach.or.us
10	City of Gearhart	Dennis McNally (City Administrator) Sabrina Pearson (City Planner)	(503) 738-5501 / (503) 355-8282	cityadmin@freedomnw.com Plandevelopment@msn.com
11	OSU Sea Grant	Patrick Corcoran (Coastal Hazards)	(503) 325-8573	Patrick.corcoran@oregonstate.edu
12	Columbia Memorial Hospital	Christine Lolich (Emergency Prep. Coordinator)	(503) 338-7561	clolich@columbiamemorial.org
13	Local Business Representative	Susan Trabucco (Publisher CRBJ)	(503) 325-2999	susan@crbizjournal.com
14	Port of Astoria	Lora Eddy	(503) 325-0435	leddy@columbiaestuary.org
15	Seaside School District	Doug Dougherty	(503) 738-5591	ddougherty@seaside.k12.or.us
16	Fire Defense Board Chief	Cleve Rooper	(503) 436-2949	cleve@cbfire.com
17	Clatsop Community College	Lindi Overton	(503) 338-2421	loverton@clatsopcc.edu

Gearhart Planning Process:

4. Documentation of the Local Planning Process

A narrative description that explains the plan's development process, including who led the development at the staff level, any external contributors such as contractors, who was involved, who provided information, who reviewed drafts, and how the public was involved.

In November 2007, with authorization from the City Council, the City Administrator, Dennis McNally, began the process of developing the Hazard Mitigation Plan. Dennis participated in the multi-jurisdiction planning process and began a draft plan with the assistance of the Multi-Jurisdiction Steering Committee and the plan facilitator hired by CREST. Dennis reviewed the draft with the City Fire Chief, the City Building Official, the City Police Chief, and the City Planner.

In April of 2008, the City Planner, Sabrina Pearson, began reviewing the draft with the City Planning Commission. The Commission reviewed the draft updates at each subsequent public Planning Commission meeting held April 10, May 8, June 12, July 10, and August 14, and October 9. The draft is written in Microsoft Word (.doc) format and converted to an Adobe Acrobat (.pdf) file. This will enable the City to make necessary edits and updates and to upload the document onto the City website.

The City submitted a printed copy and an electronic DVD copy of the Gearhart Natural Hazard Mitigation Plan to Oregon Emergency Management (OEM), FEMA Federal Emergency Management Agency, and to Clatsop County on October 14, 2008.

5. Identifying Hazards

The risk assessment includes a description describing the characteristics of each hazard for each type of probable natural hazard that can affect the jurisdiction.

The following hazards are considered to be of risk to the City of Gearhart in Clatsop County:

1. FLOOD / HEAVY RAIN

Flooding generally occurs quickly due to heavy concentrated rainfall. Tidal changes in conjunction with high winds and/or snow accumulation at higher elevations have influence on the severity as well. Flood season is in effect from November 1 through March 31. Principal riverine flood sources in Gearhart are the Neacoxie Creek, the Neawanna Creek, and the Necanicum River.

2. LANDSLIDE OR SUBSIDENCE

This hazard is the downslope movement of rock, soil, or other debris or the opening of sink holes. These hazards are often associated with other incidents such as heavy rainfall, snow melt run-off, floods or earthquakes. Our past history has been that we have frequent landslides during the rainy months on our mountain roads, highways, and city streets. The landslide hazard within Gearhart includes the erosion of ocean beaches. Beach landslides in addition to regular landslides increase this hazard in its severity level for the County.

3. WINDSTORM

Wind storms hazards are common in Gearhart and usually results in localized power outages or large scale power outages, which can affect all of Clatsop County. Windstorms can reach hurricane strength in the exposed areas and damage to homes and property is not unusual during the winter months. Structures the most vulnerable to high winds include insufficiently anchored manufactured homes and older buildings in need of roof repair. It is essential that tie down standards are enforced. Fallen trees can be a hazard. They can block roads, rails, and affect emergency operations. They can down power and utility lines. Strategic pruning working with utility companies and establishing a tree removal and maintenance program is prudent.

4. WINTER STORM / FREEZING RAIN / ICE AND SNOW

This hazard is limited mostly to the mountain passes in Clatsop County rather than the populated area in most cases. The hazard does result in travel hazards out of the County and both localized and large-scale power outages, which are more serious with low temperatures.

5. TSUNAMI

This is a series of traveling ocean waves of extremely long length and period, generated by disturbances associated with earthquakes. As it enters the shoaling water of coastlines in its path, the velocity of its waves diminishes and wave height increases. In shallow waters they can crest to heights of more than 100 feet and become a threat to life and property. The Gearhart coastline is particularly vulnerable with many residents in need of early warning.

6. EARTHQUAKE

This hazard is created by tectonic movement within the earth's crust. This movement is manifested as localized ground shaking and/or soil liquefaction. After the initial seismic event, tremors or aftershocks can occur for an extended period of time resulting in additional structural damage to buildings and public facilities. In addition to fault lines throughout the Willamette Valley which could result in damage to us, we have the additional Cascadia Subduction Zone approximately 65 miles off the Oregon coastline. The movement of the Pacific Plate and Juan de Fuca Plate with the North American Plate would create a much more serious situation due not only to the magnitude of the earthquake itself, but also the tsunami which would immediately be generated.

7. FOREST FIRE

A major threat in the County is forest fire in the large amount of public and private forest lands. Needles from the trees are highly flammable. There is a high forest fire hazard particularly during the dry months of August, September and October.

8. VOLCANIC

Another hazard experienced in Clatsop County includes volcanic ash fall. The eruption of the Mount St. Helens Volcano in the Cascade Range created 4-6 inches of ash fallout. An epidemiological emergency could occur particularly within the farming community. The volcanic ash was very difficult to remove from our road systems which damaged most of our sweepers and other road maintenance equipment. A snow plow was utilized for the best result during the Mount St. Helens incident. Other volcanoes in the Cascade Range are predicted to erupt in the foreseeable future.

9. EI NINŌ / LA NINĀ

Water temperatures in the Pacific Ocean play an important factor in determining the severity of localized weather patterns. Some of our worst flood events coincide with a La Nina where water temperatures are below average along the equator. The El Nino sets up most of the weather pattern south of us, which can lead to dry or drought conditions. With La Nina we are at higher risk for flood and severe weather patterns, and with El Nino we have a higher wild land fire hazard or drought.

12. DROUGHT

Historically, Clatsop County has very few drought years. However, when drought conditions prevail, area creeks and fish can suffer. In addition, the surrounding Forest lands are more susceptible to disease and the Clatsop plains and forests are susceptible to wild land forest fires during drought.

13. DUST STORM / SAND STORM

Dust Storms are rare in Clatsop County; however, Gearhart does suffer from blowing sand and sand storms that are mitigated by the maintenance of vegetated dunes. The Oregon Department of State Parks and the City of Gearhart work together with property owners in addressing this problem. City ordinances require the maintenance of vegetation on exposed sand areas. Sand storms could bury oceanfront homes without the stabilizing effect of vegetation.

6. Profiling Hazard Events

*The risk assessment identifies the **location** and **extent** of all natural hazards that can affect the jurisdiction. The Plan includes information on previous occurrences of hazard events and on the probability of future hazard events.*

The City obtains a regional risk assessment from Oregon State Natural Hazard Mitigation Plan Oregon Coast Regional Profile for Region 1 (2003) included in the City Natural Hazard Mitigation Plan as an appendix to this document. The regional plan is important as it accurately identifies the location of each hazard addressed in the plan, the extent of each hazard identified in the plan, previous occurrences of each natural hazard, and the probability of future hazard events. Probability and vulnerability scores are upgraded or downgraded depending on the locality characteristics using existing plans, maps, and historical documentation.

The regional profile determination of probability and vulnerability is summarized below. Details of local occurrences are included in the Regional Profile.

Probability

H: High = One incident likely within a 10 to 35 year period

M: Moderate = One incident likely within a 35 to 75 year period

L: Low = One incident likely within a 75 to 100 year period

Vulnerability

H: High = More than 10% affected

M: Moderate = 1% to 10% affected

L: Low = Less than 1% affected

Hazard	Probability	Vulnerability	Local Occurrences?
Drought	L	L	Yes
Earthquakes	H	H	Yes
Wildfire	H	M	Yes
Flood	H	H	Yes
Landslide	H	M	Yes
Tsunami	M	H	Yes
Windstorms	H	H	Yes

Gearhart Community Profile

7. Assessing Vulnerability: Identifying Assets

The plan provides an overall summary description of the community vulnerability to each hazard and the potential hazard impact on the community.

Hazards

The natural hazards that could affect the City of Gearhart, Oregon, include Coastal Erosion, Drought, Dust Storms, El Nino / La Nina, Earthquake, Flood, Fire and Wildland Interface, Landslide, Debris Flows, Tsunamis, Volcanic Hazards, Windstorms, and Winter Storms. The State of Oregon provides a detailed description of the community vulnerability to each hazard documenting probability for the Oregon Coast Region; this State of Oregon documentation is included in the Multi-Jurisdiction Plan.

Using Existing Plans and Maps to document vulnerability and impact

The plan uses existing public facility master plans and capital improvement plans, city county insurance services documentation, and tax assessor records to document the types and numbers of buildings, infrastructure, and critical facilities within the hazard area. Existing maps document where these lie within identified hazard areas.

Critical facilities, Communications and Power

During disaster events, communications and power transmission lines can easily be lost due to their location above ground. Critical facilities need power and communication equipment to function. The community relies upon imported public facilities and services and goods to meet community needs and needs a local sustainability program to ensure that those needs are met in the event of a disaster.

Water

The jurisdiction currently obtains water service from the City of Warrenton located 20 miles to the Northeast. Water service could easily be lost in the event of a disaster that required sustainability. The City is currently developing a plan for local water service to prevent complete loss during disaster events.

Transportation

Transportation in and out of the city relies upon US Highway 101. This highway is two lanes in width at each end of the city, one north and one south, and five lanes in central Gearhart. During disaster events, evacuation may make the highway unusable within the necessary evacuation timeline as all surrounding jurisdictions also rely upon it for transportation. Louis and Clark Highway, a two lane highway that travels east across the forest lands towards Astoria with access to the state interior, may provide secondary access if it is not impacted in a disaster event.

8. Assessing Vulnerability: Estimating Potential Losses

Vulnerability in terms of an estimate of the potential dollar loss to vulnerability structures and a description of the methodology used to prepare the estimate.

The types and numbers of future existing buildings located in the identified hazards areas, the potential dollar losses, and a general description of land uses and development trends are reflected by existing plans and policies and maps. Tax Assessor's Record calculates the current assessed value and market value of each structure. City County Insurance Services records calculate the current value of each city owned facility based on official appraisal records.

9. Assessing Vulnerability: Analyzing Development Trends

Vulnerability in terms of providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Existing plans and policies guide and influence land use, land development, and population growth. Plans and policies already in existence have documented support from local residents, businesses and policy makers, are updated regularly and can adapt easily to changing conditions and needsⁱ.

Land Use & Development

A detailed description of the Gearhart Land Use and Development requires review of the Gearhart Comprehensive Plan, the Gearhart Zoning Ordinance, the Census Data, the Gearhart Zoning Map, the Tax Assessor Plat Maps, and the existing plans, policies, and maps indicated above.

Land Use is governed by the City Land Use Zoning Map and the City Zoning Ordinance which defines the permitted uses for each zone. Specific land use patterns and ownership distribution are shown on the Tax Assessor Plat Maps. Development in Gearhart is divided by US Highway 101. The majority of the residential housing is located between West of US Highway 101 between the Highway and the Pacific Ocean. Housing density East of US 101 increased rapidly between 2000 and 2008. High density condominium units and a higher density of single family dwellings are located near or on the oceanfront. The Commercial Land Use is dense East of US 101 and limited to neighborhood uses in a small area west of US 101. Two golf courses are located west of US Highway 101.

Transportation & Commuting Patterns

A detailed description of the Gearhart Transportation and Commuting Patterns requires review of the Gearhart Comprehensive Plan, the Gearhart Zoning Ordinance, the Census Data, the Coordinated Population Forecast, and the existing plans, policies, and maps indicated above. In summary, transportation facilities are described on the City of Gearhart ODOT Transportation Map and the Clatsop County ODOT Transportation Map. Currently, Gearhart is served by the Sunset Empire Transportation District. The bus connects Seaside, Gearhart, Warrenton and Astoria.ⁱⁱ

Transportation is an important consideration when planning for emergency service provisions. Growth within the city will put pressure on both major and minor roads, especially if the main

City of Gearhart Natural Hazard Mitigation Plan

mode of travel is by single occupancy vehicles. How people travel to work is indicative of the prevalence of single occupancy vehicle travel, and can help predict the amount of traffic congestion and the potential for accidents. Census data for the year 2000, describes that in Gearhart, 76% drive to work alone, 12% work at home, 8% carpool, 3% walk, and 1% uses public transportation.

Geography & Climate

Gearhart is located on the Pacific Ocean front on the central coast of western Clatsop County. The climate in Gearhart is moderate. The monthly average temperatures range from highs around 68 degrees and lows around 51 degrees in July and August, to highs around 51 degrees and lows around 36 degrees in December and January. The city receives approximately 42 inches of rain annually. Monthly precipitation averages range from 10 inches during the wetter months of November through January, to around than 1 inch during the drier summer months of June through August.ⁱⁱⁱ Knowledge of geographic factors like soil types can help identify areas vulnerable to natural hazards, specifically landslides and earthquake related hazards such as liquefaction, and can assist in mitigation planning. The types of soil found in Gearhart can be characterized as sandy loam and sand with small sections of silt and peat. The majority of soil types in the have a slight to moderate hazard of erosion (K = 0.02-0.32).^{iv}

Population & Demographics

In summary, Gearhart began to draw attention as a result of the railroad between Astoria and Seaside built in 1889. Gearhart attracted many vacationers from Portland and Astoria as a pleasant and quiet landscape for relaxation.^v Eventually, people began moving to Gearhart, some making permanent residences and many others setting up vacation and second homes. In 2000, the city was home to 995 permanent residents, which made up approximately 2.8% of Clatsop County's total population^{vi}. Census Data, an official survey conducted every 10 years describes the City Population and Demographics. In the interim population growth forecasts are developed from the trend of population growth. Population is described as permanent residents. Population in Gearhart increased from 967 in 1980 to 1,027 in 1990 and decreased to 995 in 2000. The impact in terms of loss and the ability to recover vary among population groups following a disaster. Historically, 80% of the disaster burden falls on the public and may be placed upon special needs groups such as children, the elderly, the disabled, minorities, and low income persons. The 2000 Census data provides the following statistics for these groups. Children under 19 years of age equal 22% of the population and 25% of the population is over 60 years of age. Minorities who speak English as a second language equal 4% of the city's population. For permanent residents, 6.4% of all individuals and 4.7% of all families in Gearhart were living below the federal poverty level.

Employment & Economics

A review of the official US Census 2000 data reveals the employment distribution and median income in Gearhart. In 1999, the median household income in Gearhart was \$43,047.^{vii} This is over \$1,000 above the 1999 national median household income of \$41,994, and almost \$7,000 above the \$36,301 median household income for Clatsop County^{viii}. Although it can be used to compare areas as a whole, this number does not reflect how income is divided among area residents.

Housing

Housing type and year-built dates are important factors in mitigation planning. Certain housing types tend to be less disaster resistant and warrant special attention: mobile homes, for example, are generally more prone to wind and water damage than standard stick-built homes. Generally the older the home is, the greater the risk of damage from natural disasters. This is because stricter building codes have been developed following improved scientific understanding of plate tectonics and earthquake risk. For example, structures built after the late 1960s in the Northwest and California use earthquake resistant designs and construction techniques. In addition, FEMA began assisting communities with floodplain mapping during the 1970s, and communities developed ordinances that required homes in the floodplain to be elevated to one foot above Base Flood Elevation.

In the 2000 Census, Gearhart had 1,055 housing units. The majority of the housing units, 69%, are single family dwellings, 29.4% of the housing is multifamily (mainly condominiums), and 1% of the housing is manufactured homes. For all housing units, 32% (343) are owner occupied, 9% (95) are renter occupied, and 57% (605) are vacant seasonal, recreational, or occasional use homes. The majority of the Gearhart housing stock, 80.7%, was built prior to 1980, before stronger seismic building codes were put into place. The aging housing stock is susceptible to damage during disaster events.

Historic & Cultural Resources

Historic and cultural resources such as historic structures and landmarks can help to define a community and may also be sources of tourism dollars. Because of their role in defining and supporting the community, protecting these resources from the impact of disasters is important. The National Register of Historic Places lists two historic sites within the City of Gearhart – the Charles David Latourette House and the Sea Lyft^{ix}.

Critical Facilities

Critical facilities are those that support government and first responders' ability to take action in an emergency. They are a top priority in any comprehensive hazard mitigation plan.

Critical facilities in Gearhart include the City Fire Station, and the City Hall and Police Station. Gearhart Elementary School located in Gearhart is part of the Seaside School District^x. These facilities can serve as temporary shelters until locally designated shelters are developed. Specific documentation of critical facilities is included in the plan as confidential information.

The nearest hospitals are North Coast Providence Hospital in Seaside^{xi} and Columbia Memorial hospital in Astoria.

Public Facilities and Services

Water Service is provided by transmission lines from the City of Warrenton. In the event of a disaster, Gearhart could easily lose water service as the first priority for the City of Warrenton is to restore local service and Urban Growth Boundary Service prior to restoring service lines to Gearhart. The City is exploring options to obtain and provide local water service from the Clatsop Plains Aquifer to increase resilience to all types of disaster events.

Sewer Service is provided to each lot by on-site septic systems that must be approved by the Oregon Department of Environmental Quality and the regional office is located in Warrenton.

City of Gearhart Natural Hazard Mitigation Plan

Existing Plans & Policies

* = Data included in this plan, all other data available upon request

<u>Gearhart Comprehensive Plan</u>	Goals and Policies and description of the jurisdiction in terms of the Oregon Statewide Planning Goals
<u>Gearhart Zoning Ordinance</u>	Governs land use, implements Comprehensive Plan
<u>Gearhart General Ordinances</u>	Govern City Administration
<u>Water Facilities Plans</u>	Ensures adequate Water Supply
<u>Oregon Fire Code</u>	Ensures adequate access and water supply are available prior to approval of any land use application.
<u>Oregon Building Code</u>	Building Code compliance regulates construction.
<u>Gearhart Local Wetland Inventory</u>	Depicts riparian areas identified by the Oregon Department of State Lands.
<u>Gearhart Flood Hazard Rate Study</u>	Describes the potential flood risks
<u>*Census Data</u>	Describes population, income, housing, and employment data, can document potential loss.
<u>Coordinated County Population Forecast</u>	Predicts population growth between census data collection
<u>City County Insurance Services Assessment</u>	Documentation of the current value of City assets and critical facilities including the Fire Station, the police station, City Hall, and City Vehicles
<u>Tax Assessors Tax Account Records</u>	Information about the current value of structures to document potential loss.

City of Gearhart Natural Hazard Mitigation Plan

Maps

Maps depict geographic characteristics of the jurisdiction and assist the jurisdiction in planning for natural hazards when making land use decisions.

* = Map included in this plan; all other maps available upon request

Gearhart Zoning Map

*ODOT Transportation System
Map for Gearhart

*ODOT Transportation System
Map for Clatsop County

*Gearhart FEMA NFIP FIRM,
June 16, 1999;
City Map: CPN# 4100300001D
Product Kit: 410030P
Flood Insurance Study: 410030S

*Gearhart Local Wetland Map
Oregon Department of State Lands

*DOGAMI and USGS File #0A-95-13
Tsunami Hazard Map of the Gearhart Quadrangle

USGS File #O846123A8 Geo
Topographic Survey

DOGAMI
Coastal Erosion Rate Maps

Clatsop County
Tax Assessor Plat Maps

*Cascadia Subduction Zone Map

DOGAMI IMS-10 Map

Gearhart Comprehensive Plan
Geology Map

City of Gearhart Natural Hazard Mitigation Plan

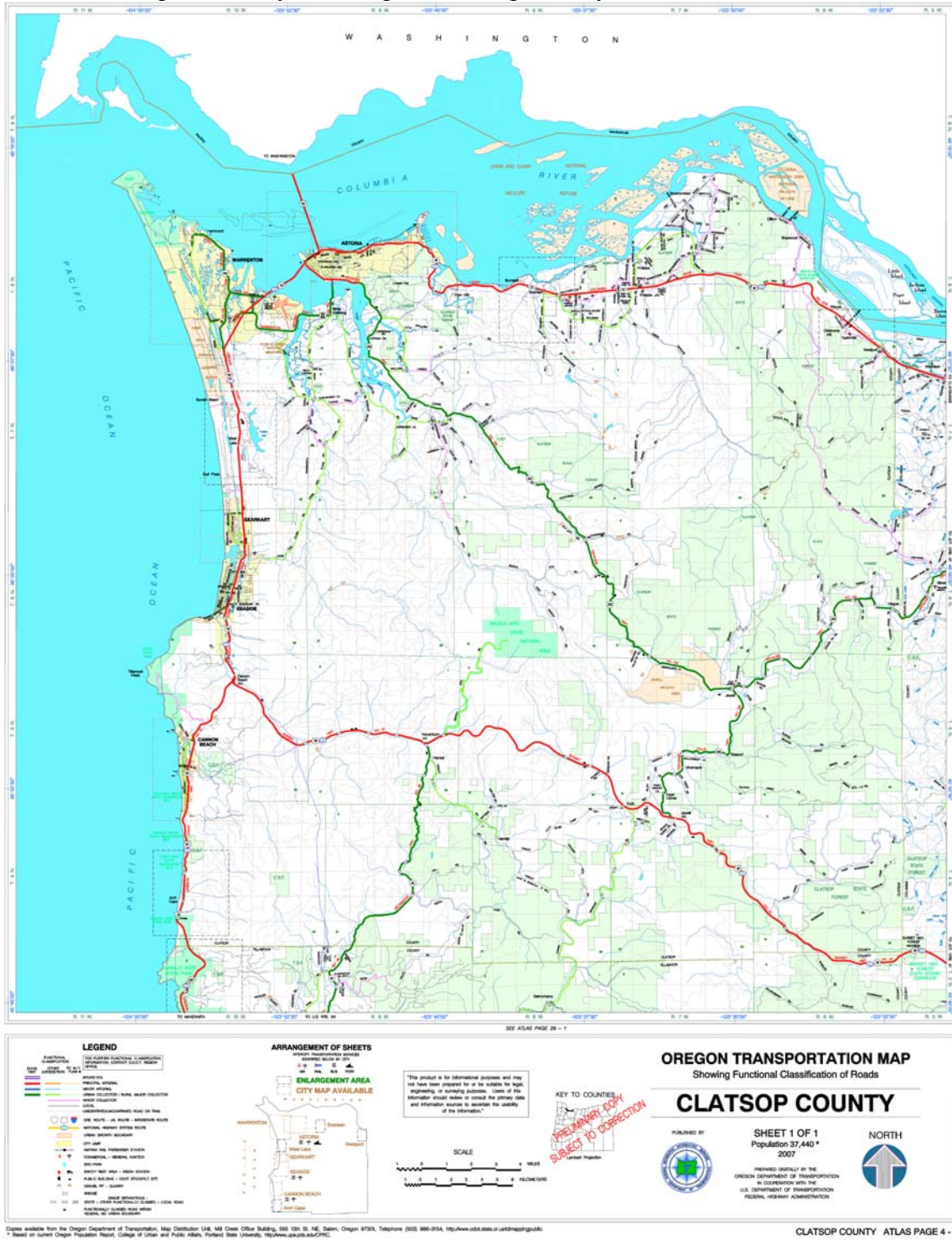
*ODOT Transportation System Map for Gearhart



* Based on current Oregon Population Report, College of Urban and Public Affairs, Portland State University, http://psu.edu/cupa

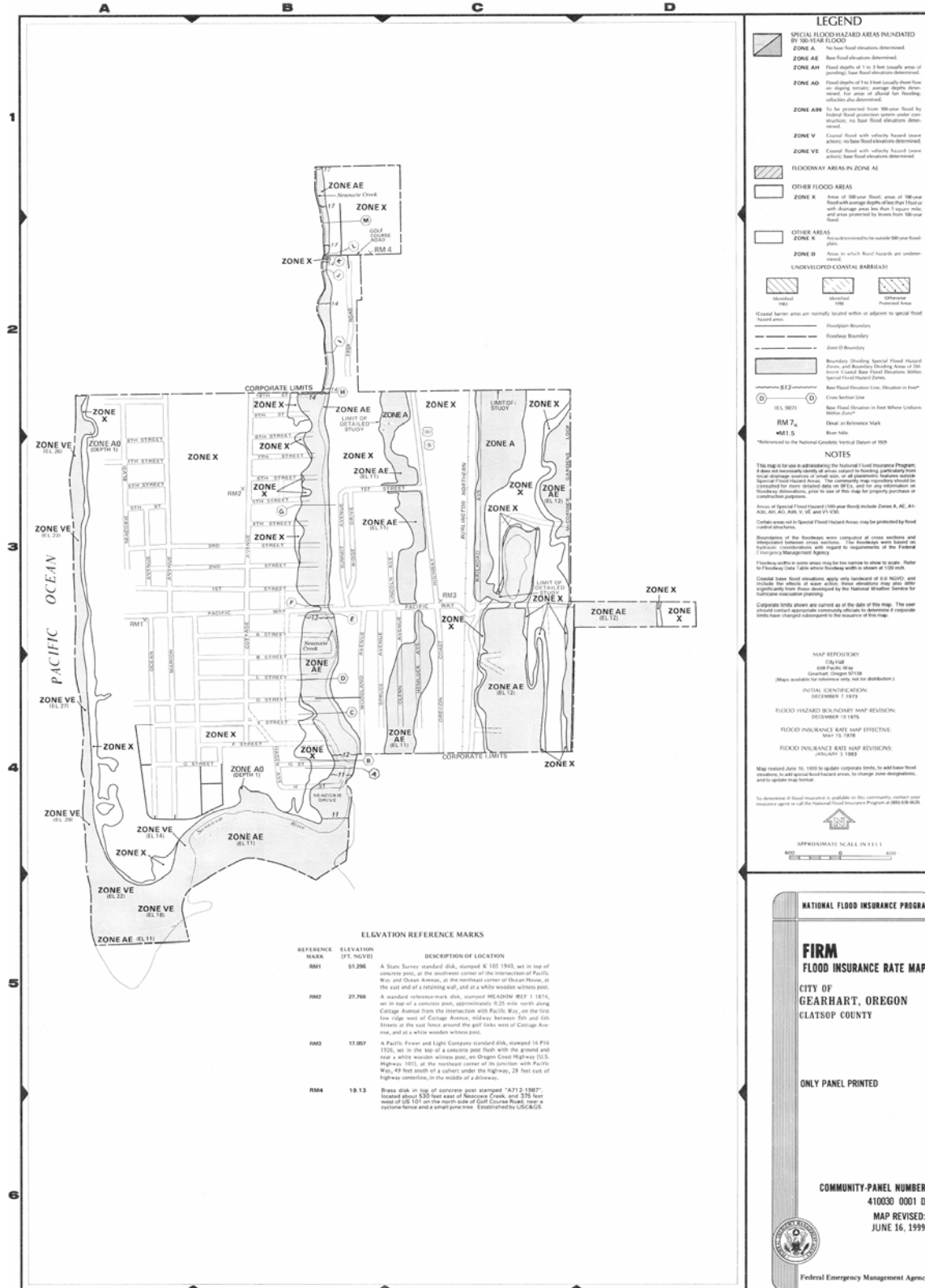
City of Gearhart Natural Hazard Mitigation Plan

*ODOT Transportation System Map for Clatsop County

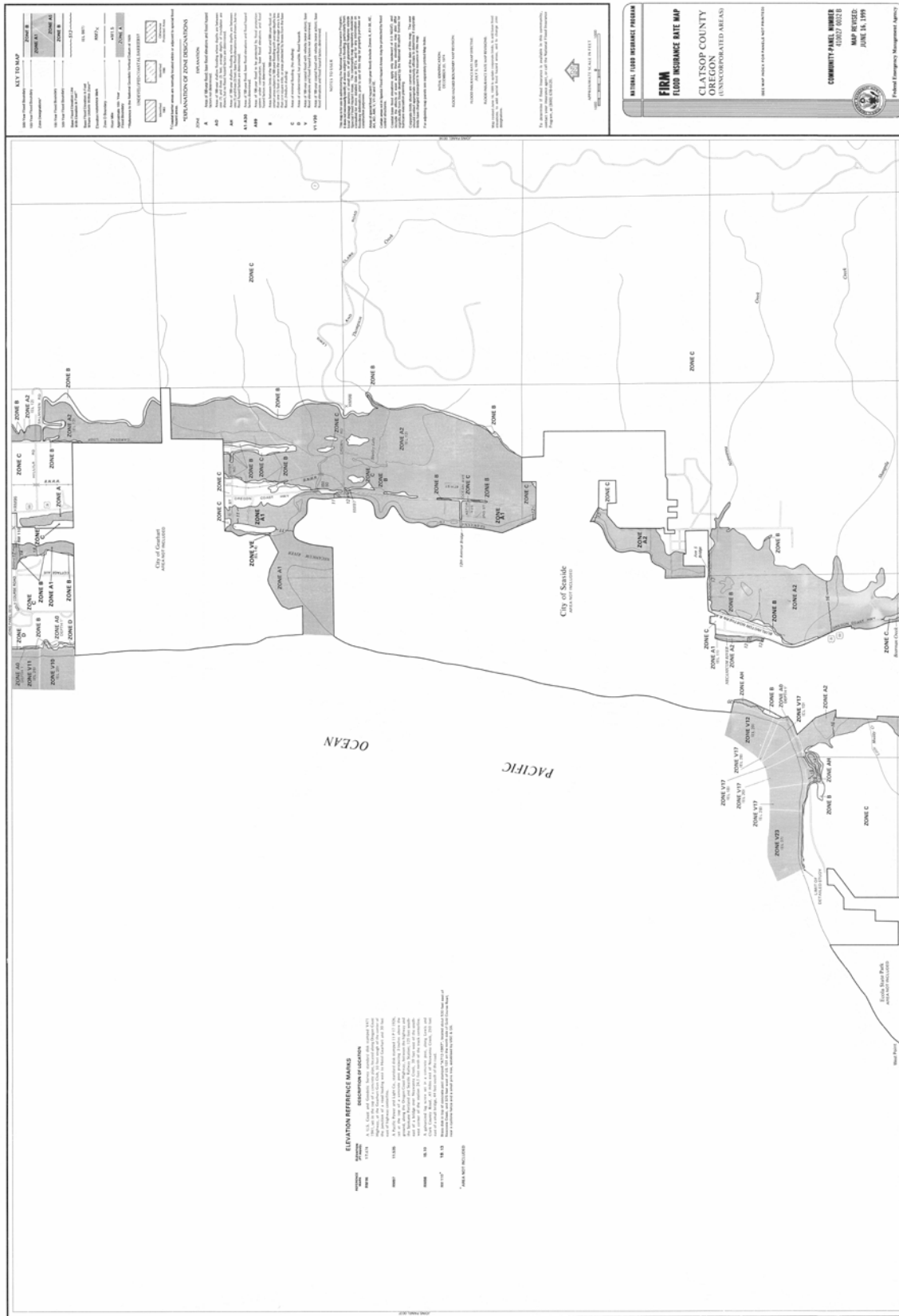


City of Gearhart Natural Hazard Mitigation Plan

FLOOD MAPS



City of Gearhart Natural Hazard Mitigation Plan



Draft
City of Gearhart
Local Wetlands Inventory



Legend

May 9, 1995

- Area A
- Area B
- Area C
- Area D
- Area E

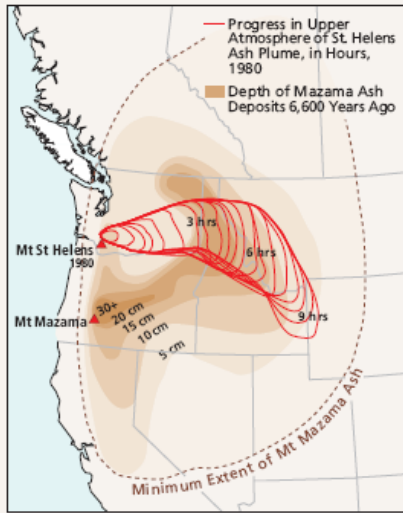
This inventory map is primarily for planning purposes. Wetland boundaries are approximate. There may be some small wetlands that are not mapped. Wetlands that are not mapped may still be regulated by the Division of State Lands and/or the Army Corp. of Engineers. Actual field conditions determine wetland boundaries.

Note: Wetlands are not necessarily required to have map. Use for general location only.

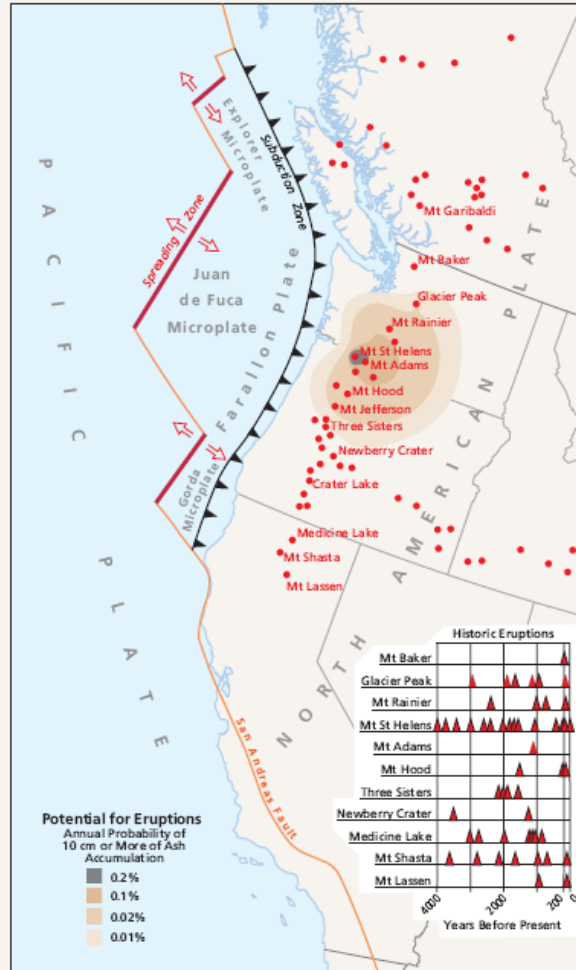
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Volcanoes

Mount Mazama and Mount St. Helens Ash Fall



Subduction and Volcanism



Ring of Fire: Volcanoes Around the Pacific



The Oregon Cascades are part of the archipelago of volcanoes that extends from northern California to British Columbia. These volcanoes typically experience episodes of growth punctuated by long periods of inactivity. They erupt very intermittently and almost always give advance warning of an impending eruption.

Loy, W.G., ed. 2001. *Atlas of Oregon, 2nd edition*. Eugene: University of Oregon Press. pp. 136-137

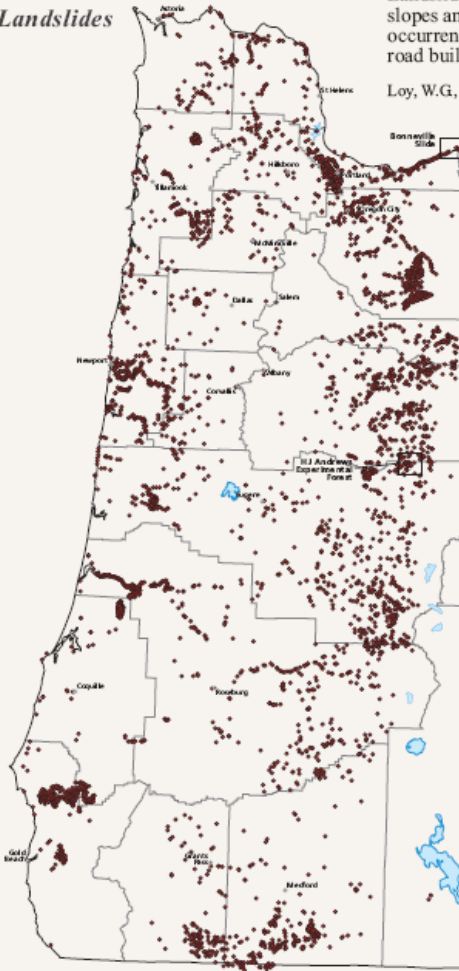
Maps from: *Atlas of Oregon, 2nd edition*
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Landslides and Earthquakes

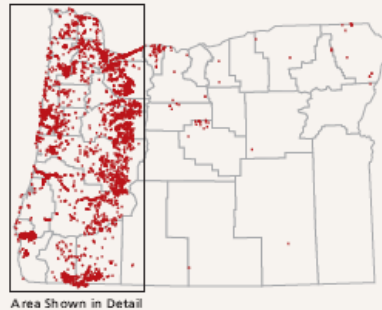
Landslides

Landslides are common in Western Oregon as a result of favorable conditions - steep slopes and high rainfall. Rare during the dry summer and fall, landslides are frequent occurrences in the winter and spring. Causes include undercutting of steep slopes, road building, and earthquake activity.

Loy, W.G., ed. 2001. *Atlas of Oregon, 2nd edition*. Eugene: University of Oregon Press. pp. 140-141



1996-1997 Landslides in Oregon



Area Shown in Detail

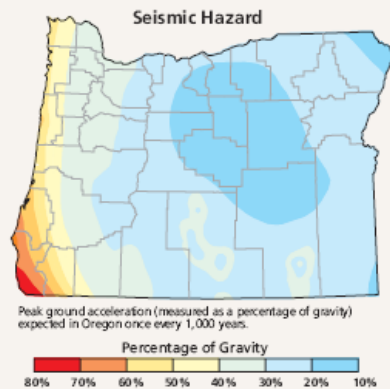
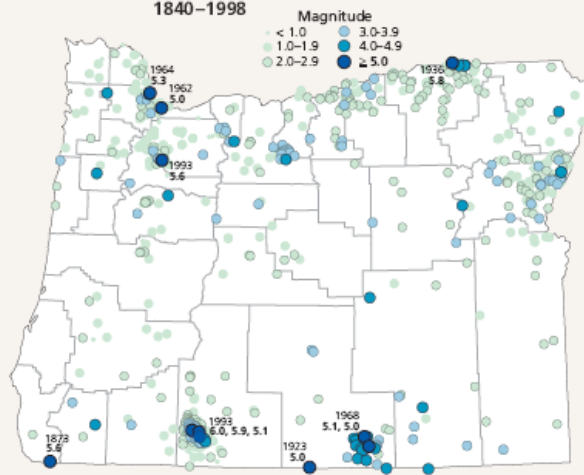
Earthquakes are caused by the bending and breaking of rocks along faults, which are most abundant in boundary zones between tectonic plates, as depicted in the Subduction and Volcanism map. Seismometers locate earthquakes and measure the resulting ground movement. The size and location of past earthquakes (map below) can be a powerful tool for predicting where future earthquakes will occur.

The Seismic Hazard map on the bottom left shows the maximum level of ground shaking likely to occur during a fixed interval of time (here, 1,000 years) from all possible earthquakes. Damage becomes significant at shaking levels of about 20% of the pull of gravity (Seismic Hazard map).

Loy, W.G., ed. 2001. *Atlas of Oregon, 2nd edition*. Eugene: University of Oregon Press. pp. 138-139

Earthquakes

Earthquakes in Oregon 1840-1998



Maps from: *Atlas of Oregon, 2nd edition*
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City of Gearhart Natural Hazard Mitigation Plan

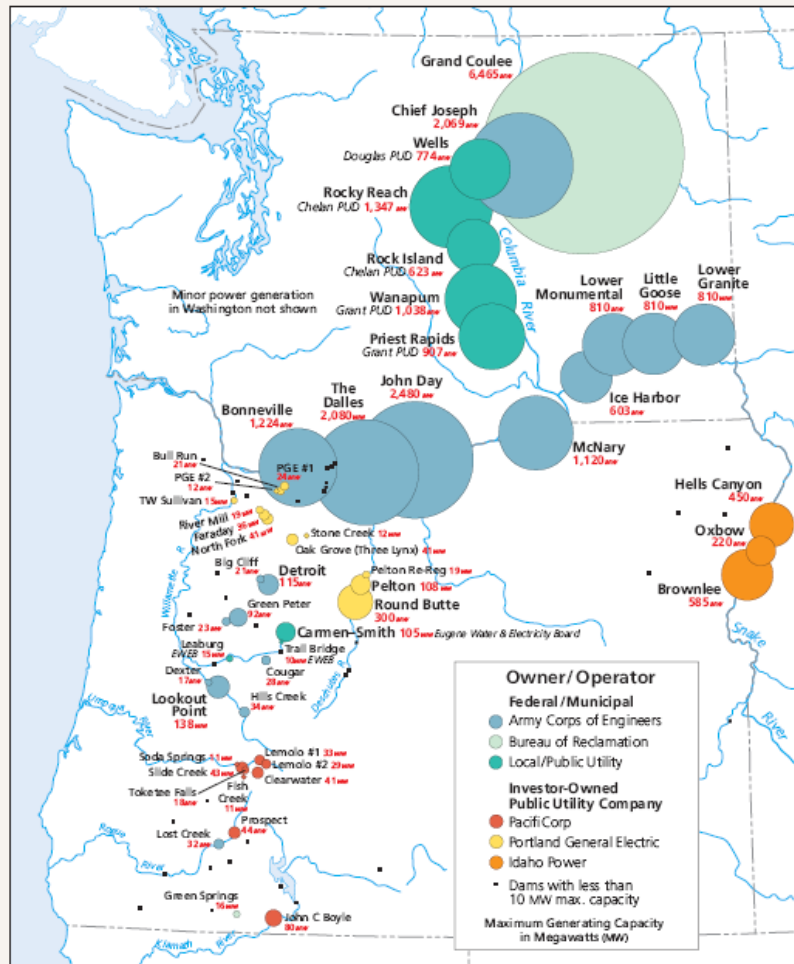
Power

Hydropower

Hydropower plants, the largest of which are on the Columbia River, account for most of Oregon's electricity generation. Coal and natural gas each account for 5% to 10% of Oregon's electricity generation. Electricity was first produced commercially in Oregon by a hydropower facility installed at the Willamette Falls in 1889. Large scale production of hydropower began in the 1930s when the federal government built dams and power plants on the Columbia, Umpqua, Rogue, and Klamath Rivers, and their tributaries.

Loy, W.G., ed. 2001. *Atlas of Oregon, 2nd edition*. Eugene: University of Oregon Press. pp. 100

Hydropower Facilities



Facilities with Greater Than 10 MW Capacity

Facility	Owner/Operator	Date in Service	Current Capacity (MW)
Columbia			
Bonneville Dam	USACE	1938	1,224
Chief Joseph Dam	USACE	1961	2,069
Grand Coulee Dam	BuRec	1942	6,465
John Day Dam	USACE	1968	2,480
McNary Dam	USACE	1953	1,120
Priest Rapids Dam	Grant PUD	1961	907
Rock Island	Chelan PUD	1933	623
Rocky Reach	Chelan PUD	1961	1,347
The Dalles Dam	USACE	1957	2,080
Wanapum Dam	Grant PUD	1964	1,038
Wells Dam	Douglas PUD	1967	774
Lower Snake			
Brownlee Dam	ID Power	1959	585
Hells Canyon Dam	ID Power	1967	450
Ice Harbor Dam	USACE	1962	603
Little Goose Dam	USACE	1970	810
Lower Monumental Dam	USACE	1975	810
Lower Granite Dam	USACE	1969	810
Oxbow Dam	ID Power	1961	220

Willamette

Facility	Owner/Operator	Date in Service	Current Capacity (MW)
Big Cliff Dam	USACE	1954	21
Carmen-Smith Project	EWEB	1963	105
Cougar Dam	USACE	1964	28
Detroit Dam	USACE	1953	115
Dexter Dam	USACE	1955	17
Faraday Dam	PGE	1965	36
Foster Dam	USACE	1968	23
Green Peter Dam	USACE	1967	92
Hills Creek Dam	USACE	1962	34
Leaburg Dam	EWEB	1930	15
Lookout Point Dam	USACE	1954	138
North Fork Dam	PGE	1958	41
Oak Grove (Three Lynx)	PGE	1923	41
River Mill Dam	PGE	1911	19
Stone Creek	PGE	1956	12
T.W. Sullivan	PGE	1923	15
Trail Bridge Dam	EWEB	1963	10

Sandy/Deschutes

Facility	Owner/Operator	Date in Service	Current Capacity (MW)
Bull Run Dam	PGE	1894	21
PGE (Bull Run) No. 1	PGE	1929	24
PGE (Bull Run) No. 2	PGE	1962	12
Pelton Dam	PGE	1957	108
Pelton Re-Regulating Dam	PGE	1958	19
Round Butte Dam	PGE	1961	300

Umpqua/Rogue/Klamath

Facility	Owner/Operator	Date in Service	Current Capacity (MW)
Clearwater Dam	PacifiCorp	1953	41
Fish Creek Dam	PacifiCorp	1952	11
Green Springs/Keene Cr. Dam	BuRec	1959	16
John C. Boyle Dam	PacifiCorp	1958	80
Lemolo Dam/Plant No.2	PacifiCorp	1956	29
Lemolo Plant No. 1	PacifiCorp	1955	33
Lost Creek/William L. Jess Dam	USACE	1976	32
Prospect Dam	PacifiCorp	1911	44
Slide Creek Dam	PacifiCorp	1951	43
Soda Springs Dam	PacifiCorp	1952	11
Toketee Falls Dam	PacifiCorp	1949	18

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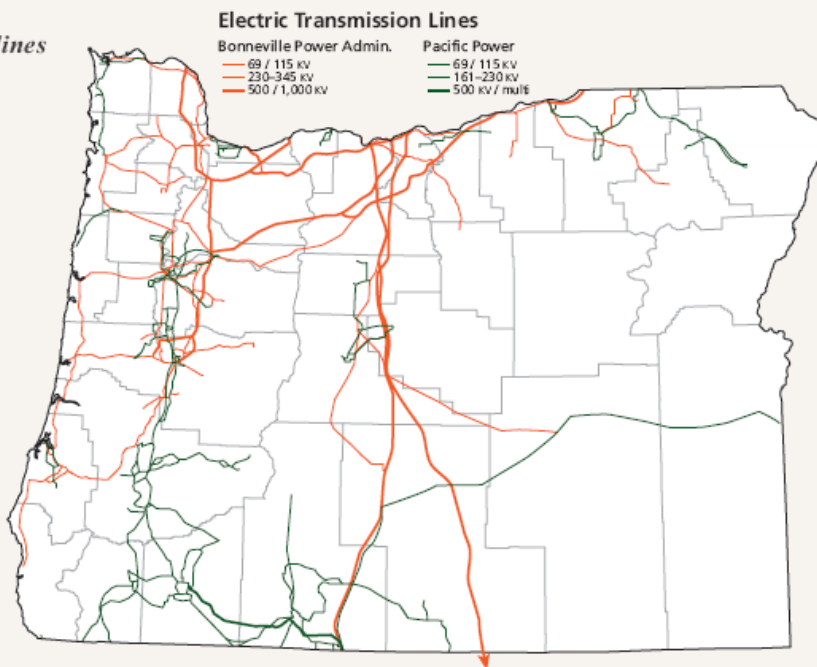
Energy Distribution

Power Grid and Pipelines

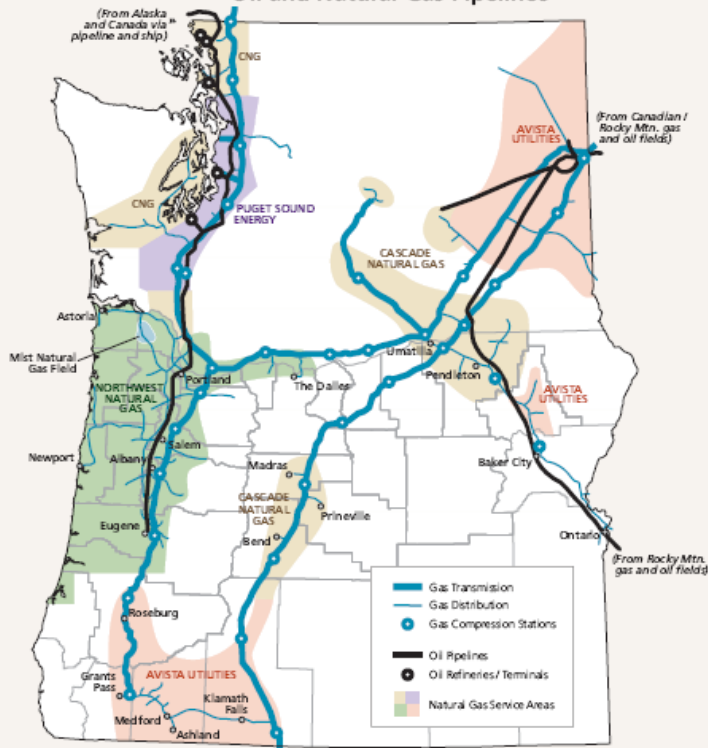
The West Coast power grid consists of numerous electricity-generating facilities and connecting transmission lines. Utilities in Oregon exchange electricity with other states and Canada. The top companies in retail sales revenue are Portland General Electric and Pacific Power and Light.

Most of Oregon's petroleum products, including gasoline, come from Northern Alaska. Natural gas burned in Oregon comes mostly from Alberta, Canada. Although a small amount of natural gas is produced in Columbia County, most comes by pipeline from Canada and several Rocky Mountain states. Long-distance gas transmission service is provided throughout the state.

Loy, W.G., ed. 2001. *Atlas of Oregon, 2nd edition*. Eugene: University of Oregon Press. pp. 102-103

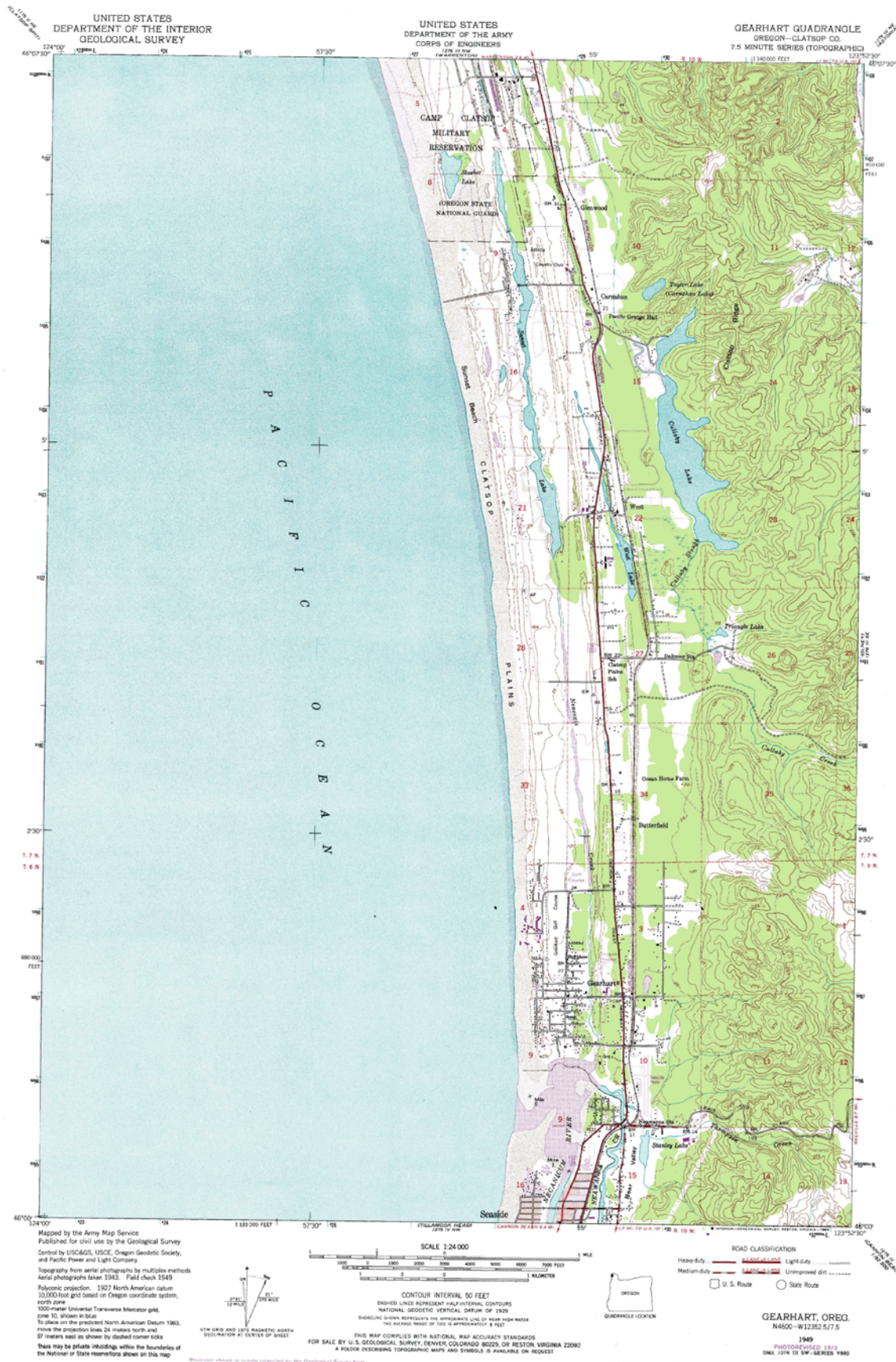


Oil and Natural Gas Pipelines



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City of Gearhart Natural Hazard Mitigation Plan



City of Gearhart Natural Hazard Mitigation Plan



Oregon Coast/Lower Columbia Region

Comprised of the state's costal line and the lower Columbia River, the Oregon Coast/Lower Columbia region has experienced an eight percent increase in population since 1990. This represents a lower rate of growth than other regions of the state. Just over half of the region's population lives in incorporated areas. Thirty percent of the region's houses were built before 1960, 35% between 1960 and 1980, and 35% were built after 1980. Transportation networks are an even greater consideration for the coastal region given the physical boundary of the ocean to the west and the Coast Range to the east. The average commute for workers in this region is 22 minutes each way. Seventy-five percent of the region's workers drive alone to work, 13% carpool, and five percent work from home. Most bridges in the area have not been seismically retrofitted, creating significant risk to the commuting population in areas at risk from earthquakes.

REGION FACTS

Population:		Housing:	
Total	208,000	Single-Family	55%
Rural	93,010	Multi-Family	18%
Urban	114,990	Mobile Homes	18%
		Boat, RV, Van, etc.	2%



County	# of Hospitals	# of Hospital Beds	Police Stations	Fire & Rescue Stations	Power Plants	Dams	Bridges
Clatsop	2	60	7	19	2	6	186
Coos	3	152	9	19	0	14	258
Curry	1	24	5	13	0	4	91
Douglas	1	17	1	1	0	0	12
Lane	1	21	1	1	0	0	19
Tillamook	1	30	6	9	0	2	242

Critical Infrastructure

- School
- Hospital
- ✕ Bridge
- Power Substation
- ▬ Dam

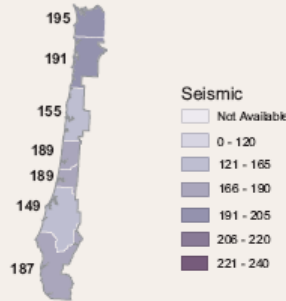


County Hazard Analysis

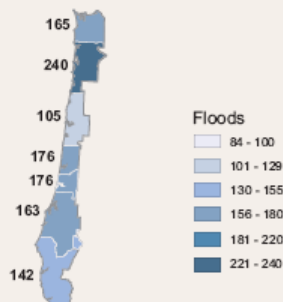
As part of the County Hazard Risk Analysis, each county develops risk scores for Oregon's major natural hazards. This score, ranging from 24 (low) to 240 (high), reflects the County's perceived risk for the particular hazard. Scores are current as of July 2003.

To obtain the most current scores, see <http://www.oregonshowcase.org> or contact Oregon State Police – Office of Emergency Management <http://www.osp.state.or.us/oem/>.

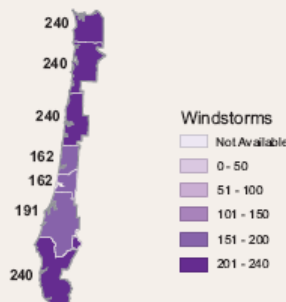
Seismic



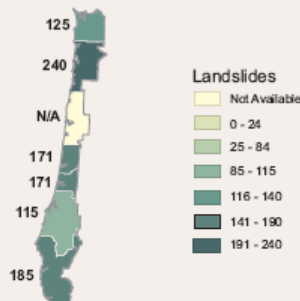
Floods



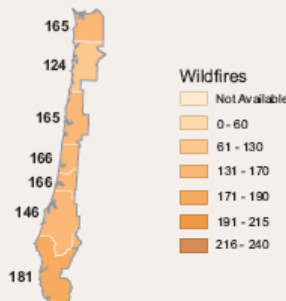
Windstorms



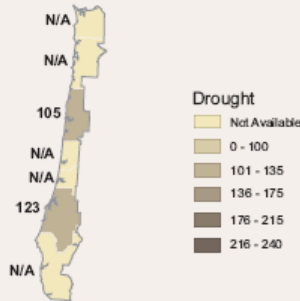
Landslides



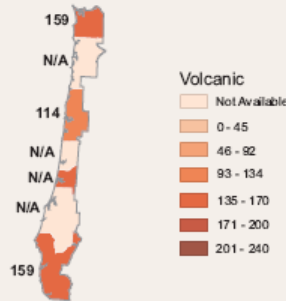
Wildfires



Drought



Volcanic



10. Multi-Jurisdictional Risk Assessment

Provides a local jurisdiction risk assessment where they differ from the entire planning area.

Increased Natural Hazard Risk

The City of Gearhart is subject to increased disaster risk from:

1. Storm surge and riverine flooding at the Neacoxie Creek outlet to the Pacific Ocean;
2. El Nino and La Nina Events increase disaster event probability and vulnerability;
3. Long Range Tsunami from Tsunami events off-shore;
4. Short Range Tsunami with an associated Cascadia Subduction Zone Earthquake; Windstorm from hurricane force winds from South Storms;
5. Winter Storms from the polar jet stream to the North accompanied by snow and ice; and
6. Wildland Fire from the East due to the abundant forest lands and from the West due to the oily nature of the oceanfront dune grass vulnerable to a poorly placed beach fire or the use of incendiary devices.

Assessing Risk

Identifying hazard risks involves collecting historical knowledge and reviewing scientific knowledge including geographic and geologic evaluation. This knowledge can be further enhanced by utilizing technical evaluation tools such as Geographic Information Systems Mapping technologies.

Evaluating Concurrent Hazards that can Compound Disasters

When considering the impacts of natural hazards on development, it is important to understand that depending on the triggering event, other hazards can be triggered as well. For example, heavy rainfall can cause landslides and floods. Earthquakes can trigger landslides, tsunamis, and volcanic eruption. A major landslide, earthquake, tsunami or flood could destroy a road, damage utility systems, and isolate an area. Sometimes a proposed solution for one hazard can aggravate another hazard. Multi-hazard risk analysis is therefore recommended when more than one hazard exists.

11. Local Hazard Mitigation Goals

The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The following goals and objectives apply comprehensively to each potential hazard

GOAL 1: Develop and implement mitigation initiatives as potential projects to reduce hazards to human life, businesses, public and private property, and environmental systems.

1. Evaluate applicable city ordinances and capitol improvement plans to ensure that they guide development that reduces potential for hazard
2. Promote insurance coverage to provide economic recovery after a disaster
3. Preserve environmental systems to serve natural hazard mitigation functions
4. Continuously develop and update natural hazard related data

GOAL 2: Implement effective mitigation projects and activities

1. Evaluate mitigation projects and activities for benefit/cost analysis and cost effective analysis
2. Educate the public about hazard risks and mitigation project implementation
3. Consistently seek diverse funding and resource partnerships for mitigation project and activity implementation

GOAL 3: Enhance Emergency Services and Local First Responders

1. Enhance community self-sustainability
2. Prepare first responders with training and equipment
3. Strengthen emergency operations through improvements to communication and coordination
4. Coordinate hazard mitigation with emergency operations plans and procedures

GOAL 4: Improve regional coordination and communication

1. Participate in the Regional Hazard Mitigation Steering Committee
2. Maintain an active Emergency Preparedness Committee
3. Survey the community and develop response plans for each potential hazard

12. Identification and Analysis of Mitigation Measures: Action Items

For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

The City of Gearhart addendum includes action items that, when implemented, will reduce the city's vulnerability to natural hazards. Many of these recommendations are consistent with the goals and objectives of the city's existing plans and policies. Implementing the addendum's action items through existing plans and policies increases their likelihood of being supported and getting updated, and maximizes the city's resources.

All Hazards

1. Review, revise, and update the Natural Hazard Mitigation Plan with local and multi-jurisdiction plan adoption by resolution not less than one time each five years calculated from the date of Local Plan and County Multi-Jurisdiction Plan approval.
2. Ensure the use of a cost-benefit analysis to ensure that mitigation action items are efficient and meet mitigation criteria.
3. Evaluate City Ordinances and Capitol Improvement Plans not less than one time each five years to ensure that they require new development and provide incentives for existing development to reduce the potential for hazard.
4. Evaluate the location of critical facilities and structures and relocate structures and facilities in disaster impacted areas to ensure their continued in the event of a disaster. Ensure new critical facilities and structures are located in disaster resistant locations.
 - a. Relocate City Hall out the Tsunami Inundation Zone.
 - b. Relocate the Fire Station out the Tsunami Inundation Zone.
5. Evaluate the construction of critical facilities, public utilities and services and retrofit, relocate, or bury as necessary to withstand the impact of disaster events.
 - a. Provide generators, stand-by power capabilities, and fuel sources for critical facilities, emergency equipment, public utilities and services, disaster gathering sites and those with special medical needs for use during disaster events.
 - b. Develop a local water facility to ensure adequate water supplies in the event of a disaster.
6. Develop a Community Self-Sustainability Program to provide food, shelter, hygiene, water, communication, and public utilities and services in the event of a disaster.
 - a. Conduct an annual census of Gearhart to identify those with special skills, special equipment, and resources and to identify those with special medical and mobility needs.
 - b. Develop and identify neighborhood suitability programs. Identify leaders in each neighborhood. Encourage each community member to have disaster event communication equipment and supplies.
 - c. Strengthen emergency operations by developing a disaster event communication plan. Improve communication equipment. Ensure improvements to communication and coordination.
 - d. Identify and enhance disaster evacuation routes practice mass emergency evacuation.
 - e. Prepare CERT Community Emergency Response Team with training and equipment to act as first responders and deputize necessary persons.
 - f. Identify disaster gathering sites and improve for their identified functions.

City of Gearhart Natural Hazard Mitigation Plan

7. Develop and implement a community disaster preparedness program.
 - a. Conduct a periodic an annual survey to identify and mitigate or encourage the mitigation of potential hazardous trees.
 - b. Encourage retrofitting of external building features such as awnings, signs, propane tanks, etc, and interior features such as water heaters.
8. Educate the community about hazard risks and hazard mitigation. Encourage participation in mitigation and community sustainability programs by holding a periodic / an annual open house or town hall meeting.

Coastal Erosion

1. Conduct a periodic survey of the vegetation on the dune and exposed sand areas. Require the maintenance of vegetation on exposed sand dune areas to increase resilience to coastal erosion.
2. Require a dune hazard report in areas of known coastal erosion.
3. Utilize Mapping tools available at DOGAMI website.
4. Comply with Geologic Report Guidelines for Shoreline Protection.
5. Provide equipment / supplies for temporary erosion control measures during storms.

Drought

1. Develop secure water source.
2. Implement a water conservation plan to ensure adequate water supply.
3. Ensure that run-off does not pollute ground water supplies.

Dust Storms / Sand Storms

1. Conduct a periodic survey of the vegetation on the dune and exposed sand areas. Require the maintenance of vegetation on exposed sand dune areas to increase resilience.

El Nino / La Nina

1. Comply with FEMA Floodplain recommendations.
2. Develop secure water source.
3. Implement a water conservation plan to ensure adequate water supply.
4. Ensure that run-off does not pollute ground water supplies.
5. Implement winter storm preparation standards.

Earthquake

1. Retrofit structures, infrastructure, and critical facilities to reduce vulnerability to seismic activities.
2. Develop and practice an evacuation plan.
3. Develop an emergency shelter and operation center.
4. Train Certified Emergency Response Teams for each neighborhood.

Flood

1. Comply with FEMA Floodplain recommendations for development within a floodplain.

Fire – Wildland Interface

1. Provide information about smoke alarms, fire safety, fire sprinkler systems for individual structures.
2. Ensure adequate space between structures to reduce vulnerability
3. Construct fire access roadways and turnarounds within vulnerable neighborhoods, purchase land where rights-of-way are not available.
4. Retrofit sources of potential fires in a disaster such as fuel tanks.
5. Initiate and maintain a routine fire inspection and prevention program within the neighborhood.
6. Conduct a periodic fire inspection for vegetative fuels reduction and vegetation maintenance program to provide fire buffer to structures.

Landslide – Debris Flows

1. Install drainage systems where necessary to prevent soil erosion.
2. Require the maintenance of vegetation on bare soils.
3. In areas of slope hazard, require site investigation reports and soils engineering.

Tsunamis

1. Retrofit structures, infrastructure, and critical facilities to reduce vulnerability to seismic activities.
2. Develop and practice an evacuation plan.
3. Develop an emergency shelter and operation center.
4. Train Certified Emergency Response Teams for each neighborhood.

Volcanic Hazards

1. Develop and practice an evacuation plan.
2. Develop an emergency shelter and operation center.
3. Train Certified Emergency Response Teams for each neighborhood.

Windstorms

1. Encourage the maintenance of trees to prevent tree hazards.
2. Develop an emergency shelter and operation center.
3. Train Certified Emergency Response Teams for each neighborhood.

Winter Storms

1. Retrofit structures, infrastructure, and critical facilities to reduce vulnerability to seismic activities.
2. Develop and practice an evacuation plan.
3. Develop an emergency shelter and operation center.
4. Train Certified Emergency Response Teams for each neighborhood.

City of Gearhart Natural Hazard Mitigation Plan

This form is a template to use when developing the above natural hazard mitigation action items.

PRE-DISASTER MITIGATION ACTION ITEM

Proposed Action Item:		Alignment with Plan Goals:
Rationale for Proposed Action Item:		
Ideas for Implementation:		
Coordinating Organization:		
Internal Partners:	External Partners:	
Timeline:		If available, estimated cost:
<u>Short Term</u> (0-2 years)	<u>Long Term</u> (2-4 or more years)	
Form Submitted by:	City of Gearhart	

13. Implementation of Mitigation Measures:

The mitigation strategy section shall include an action plan describing how the actions identified shall be prioritized, implemented, and administered by the city. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Hazard Mitigation follows an orderly process that includes:

Step 1: Identify the hazard risks

Step 2: Characterize the location, probability, and potential severity of the hazards

Step 3: Educate the community about the hazards

Step 4: Define acceptable risks

Step 5: Identify appropriate hazard mitigation measures

Step 6: Use a cost benefit review to review mitigation measures.

Hazard mitigation consists of activities with one overriding goal: To lessen future losses from hazard events. Hazard Mitigation actions coordinate public policy, intergovernmental relations, public-private partnerships, economics, acceptable risk and a wide range of activities and programs all based on the evaluation of the risk, probability, and severity of the potential hazard.

“Hazard Mitigation means any action taken to reduce or eliminate the long-term risk to human life and property from hazards.” 44 CFR Subpart M 206.401

The easiest, but often not the most feasible hazard mitigation action is to avoid the hazard. This takes a combination of knowledge and a willingness by public and private decision-makers to define such situations as unacceptable risks. For example, often it is much safer and less environmentally disruptive to avoid construction improvements in high velocity floodplains and to avoid landslide prone hillsides than it is to build expensive structures to control flooding or landslides.

There are societal benefits to be achieved by developing and implementing effective hazard mitigation strategies and programs. Actions taken by local, regional, and federal governments, the private sector, public utilities, and others who invest in hazard mitigation help ensure the continuity and survivability of assets at risk from hazards. Some of the most apparent benefits of hazard mitigation include reduced human and structural losses, lower response costs and demands on emergency services, and reduced losses on the economy. Further benefits of hazard mitigation include maintaining or improving natural, recreational, and environmental assets such as water quality and agricultural and forest productivity.

Economic Analysis for Natural Hazard Mitigation

Much of the loss from natural disasters comes in the form of property damage, additional living and business interruption costs, and other costs directly related to the impacts of hazard events. It is usually important to determine the economic feasibility of preventative actions that may lessen future losses. Governmental agencies should ensure that the benefits of hazard mitigation exceed the costs.

Cost Benefit Review and Analysis

If federal funding is involved in hazard mitigation projects, a cost to benefits analysis must determine that the benefits exceed the costs. Cost to benefits analysis methods and training have been developed and guidance is available from OEM in Appendix 9 of the State of Oregon Natural Hazards Mitigation Plan (SNHMP). A cost benefit ratio of 1:1 is required to meet the minimum review criteria.

Benefit to cost analysis by itself does not address the full range of considerations, including non-economic impacts such as but not limited to community values, historic properties, habitat and environmental issues, and especially important or critical facilities.

The City of Gearhart currently distributes the responsibility for the prioritization, implementation, and administration of existing plans, policies, ordinances and the Natural Hazard Mitigation Plan including the Action Items among various departments.

Government Structure:

The City of Gearhart is led by a Mayor and a four-member city council. The City Council meets a minimum of one time per month on the first Wednesday of each month in City Hall Council Chambers at 7 pm.

Administration:

The City Administrator also serves the Council and administrates the City ordinances. The City Administrator also serves as the public works administrator.

Two office employees work under the direction of the City Administrator. An Administrative Assistant-Treasurer handles the office work and a City Clerk works with the local court and the Planning Commission.

Various public works employees work under the direction of the City Administrator. Professional consultants exclusively serve the City under the direction of the City Administrator. Consultants include a City Attorney to serve the City Council, a City Planner to review land use applications and work with the City Planning Commission, and a City Land Use Attorney to review land use issues at the request of the Planning Commission.

Police:

Gearhart has one police department with four officers, one of whom is reserve.

Fire:

The Gearhart Fire Department has one station and one full-time fire chief. The remaining 26 members of the Gearhart Fire Department are volunteers.

Land Use:

Land use applications are administered with the technical assistance of the City Planner and City Attorney under the direction of the City Administrator and working with the City Clerk, the Planning Commission, the City Council and the County Commission.

City of Gearhart Natural Hazard Mitigation Plan

The Planning Commission:

The Planning Commission is a committee of the City Council established to study and make recommendations to the City Council, to public officials, and to individuals regarding matters relating to planning and development of the city and the surrounding area.

Hazard Mitigation Plan:

The Planning Commission and City Council function as the public review bodies. City Staff including the City Planner, the City Administrator, Public Works Director, City Fire Chief and City Police Chief provide technical information and review of the Hazard Mitigation Plan.

Hazard Mitigation Plan and Emergency Preparedness Committee:

The City has established a Hazard Mitigation and Emergency Preparedness Committee including the City Fire Chief, the City Administrator, the City Public Works Director, the City Police Chief, the City Planner, the Building Official, (a) member(s) of the Planning Commission, and (a) member(s) of the City Council.

Prioritization, Implementation, and Administration of Action Items:

The Committee will meet no less than two times each year in April and in October. A third meeting, an Open House, will be held by the City in the Summer. This meeting will reach out to seasonal homeowners and be an opportunity to provide information in a relaxed atmosphere. The Committee will review, prioritize, and implement action items through applicable funding mechanisms and programs. A reference document with these programs is provided by FEMA. These meetings will be open to the public. Notice will be published and posted consistent with public meeting requirements. Periodically surveys will be sent to the public requesting information critical to hazard mitigation and emergency preparedness planning. Emergency Preparedness information will be available at City Hall.

14. Multi-Jurisdictional Mitigation Strategy

For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Action Items: See Section 12

Multi-Jurisdiction Participation:

The City Multi-Jurisdiction Plan member of the Committee will meet with the Multi-Jurisdiction Steering Committee in May and November of each year.

Building Permits:

Building permits are reviewed for consistency with Oregon Building Codes, the National Floodplain Insurance Program, the Fire Code, the Zoning Ordinance, Public Works Standards, and the General Ordinances by the City Administrator and the City Building Official.

Community Organizations and Programs:

Community organizations and programs provide social and community-based services, such as health care or housing assistance, to the public. In planning for natural hazard mitigation, it is important to know what social systems exist within the community because of their existing connections to the public. Actions identified by the plan include the establishment of communication channels with the public and specific subgroups within the population such as the elderly and school children.

The County and Cities can use existing social systems as resources for implementing such communication-related activities because these service providers already work directly with the public on a number of issues, one of which is natural hazard preparedness and mitigation.

Clatsop County Multi-Jurisdiction Hazard Mitigation Plan:

A Clatsop County Community Organizations and Programs Guide is provided in Section 2 of the guide highlights organizations that are active within the County and may be potential partners for implementing mitigation actions.

15. Monitoring, Evaluating, and Updating the Plan: Five-year cycle

The plan maintenance process shall include a section describing the method of monitoring, evaluating, and updating the plan within a five year cycle.

The City shall review the Hazard Mitigation Plan at not fewer than two public meetings per year. Currently, the Planning Commission and City Council serve as the public meeting review bodies. These meetings are currently scheduled to be held at the regular April and September Planning Commission meeting. Meetings shall be noticed to the public consistent with Public Meetings Laws. Minutes shall be taken of each meeting. City Staff including but not limited to the City Administrator and Public Works Superintendent, the City Planner, the City Fire Chief and the City Police Chief will provide technical input for the Hazard Mitigation Plan and will review each draft.

The City will participate in the Multi-Jurisdiction Hazard Mitigation Plan meetings held by Clatsop County not fewer than two times per year. Multi-Jurisdiction Plan meetings are currently scheduled to be held on a date to be determined each May and November. Meetings shall be set by the Steering Committee Members who shall also set the time and place. Special meetings may be called by the Steering Committee. Meetings shall be noticed to the public consistent with Public Meetings Laws. Minutes shall be taken of each meeting. Committee members receive no compensation for their membership.

The Hazard Mitigation Plan shall be reviewed, revised if appropriate, and resubmitted to the State Hazard Mitigation Officer for approval within five years of the date that the Multi-Jurisdiction Plan is approved in order to continue to be eligible for HMGP project grant funding. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. When the City is notified that their plan is approved, the local jurisdiction shall adopt the plan by resolution.

At the public meetings to be held, the review body shall review the Hazard Mitigation Plan and shall incorporate the requirements of the hazard mitigation plan, existing plans, studies, reports and technical information into planning mechanisms such as the Comprehensive Plan, Zoning Ordinance, or Capital Improvement Plans where appropriate.

16. Implementation through Existing Programs

The plan shall describe the process by which the local government incorporates the requirements of the mitigation plan into other mechanisms such as comprehensive plans or capital improvement plans when appropriate.

Implementing the natural hazards mitigation plan's action items through existing plans and policies increases their likelihood of being supported and getting updated, and maximizes the city's resources. Linking existing plans and policies to the Natural Hazards Mitigation Plan helps identify what resources already exist that can be used to implement the action items identified in the Plan to reduce natural hazard risk.

The City shall review the plan and at regularly scheduled public meetings shall provide recommendations to incorporate the requirements of the hazard mitigation plan into other mechanisms such as comprehensive plans or capital improvement plans when appropriate. The Planning Commission shall undertake a post acknowledgement plan amendment process when processing a zoning ordinance or comprehensive plan amendment. The City Council shall follow public meeting and public hearing processes when incorporating mitigation plans into capital improvement plans and city ordinances.

17. Continued Public Involvement: Ensure continued public participation

The plan shall explain how continued public participation will be obtained.

The City shall review the Hazard Mitigation Plan at not fewer than two public meetings per year. Currently, the Planning Commission and City Council serve as the public meeting review bodies. These meetings are currently scheduled to be held at the regular April and September Planning Commission meeting. Meetings shall be noticed to the public consistent with Public Meetings Laws. Minutes shall be taken of each meeting. City Staff including but not limited to the City Administrator and Public Works Superintendent, the City Planner, the City Fire Chief and the City Police Chief will provide technical input for the Hazard Mitigation Plan and will review each draft.

The City will participate in the Multi-Jurisdiction Hazard Mitigation Plan meetings held by Clatsop County not fewer than two times per year. Multi-Jurisdiction Plan meetings are currently scheduled to be held on a date to be determined each May and November. Meetings shall be set by the Steering Committee Members who shall also set the time and place. Special meetings may be called by the Steering Committee. Meetings shall be noticed to the public consistent with Public Meetings Laws. Minutes shall be taken of each meeting. Committee members receive no compensation for their membership.

At the public meetings to be held, the review body shall review the Hazard Mitigation Plan with the public, neighboring communities, local and regional agencies involved in hazard mitigation activities. The review body shall note and address concerns about hazard risks. In this manner, the plan will be reviewed regularly by the public during the drafting stage and prior to adoption.

City of Gearhart Natural Hazard Mitigation Plan

- ii Sunset Empire Transportation District, *Pink Salmon Route*, <http://www.ridethebus.org/routes/rt101.html>.
- iii National Weather Service Forecast Office. 2007, http://www.wrh.noaa.gov/pqr/climate/ast_clisummary.php>
- iv United States Department of Agriculture. Natural Resources Conservation Service, *Web Soil Survey*, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- v City of Gearhart. <http://www.ci.gearhart.or.us/cityhall.html>.
- vi United States Census Bureau. 2000, *Fact Sheet: Gearhart, Oregon*, www.census.gov.
- vii United States Census Bureau. 2000, *Fact Sheet: Gearhart, Oregon*, www.census.gov.
- viii United States Census Bureau. 2000. *Fact Sheet: Clatsop County, Oregon*, www.census.gov.
- ix National Register of Historic Places. 2008, <http://www.nps.gov/nr/research/nris.htm>.
- x Seaside School District, <http://www.seaside.k12.or.us>
- xi City of Gearhart Services, <http://www.ci.gearhart.or.us/Services/>.