



Highway 101 on Lake Crescent, December 2008

**Hazard Mitigation Plan for
Clallam County with
City of Forks
City of Port Angeles
City of Sequim
Port of Port Angeles
Peninsula College
Olympic Medical Center
Public Utility District**

August 2010

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TABLE OF CONTENTS

PART I - PLANNING PROCESS	1
A. DESCRIPTION OF PROCESS	1
1. PLAN PREPARATION	2
2. PLAN DEVELOPMENT	2
3. STEERING COMMITTEE	3
4. STEERING COMMITTEE MEETINGS	4
5. PROCEDURE TO ADD AN ORGANIZATION TO THE PLAN	4
6. PUBLIC INVOLVEMENT	5
B. PLAN ORGANIZATION	6
PART II – RISK ANALYSIS.....	7
A. COMMUNITY PROFILE	7
1. GEOGRAPHY & CLIMATE*	7
2. POPULATION & DEMOGRAPHICS	9
3. HOUSING	10
4. TRANSPORTATION & COMMUTING PATTERNS	10
5. TOURISM	10
B. RISK ASSESSMENT	11
1. DESCRIPTION OF REGIONAL CONDITIONS	11
2. IDENTIFICATION OF KEY HAZARDS	12
C. PROFILES OF KEY HAZARDS	15
1. DROUGHT	15
2. EARTHQUAKE / SEISMIC-RELATED	16
3. RIVERINE AND COASTAL PROCESSES	18
4. LANDSLIDE AND EROSION	30
5. SEVERE STORMS	32
6. TSUNAMI (see also pp. 16-17 in seismic hazard section)	32
7. WILDLAND / URBAN FIRE	33
7. VOLCANO	35
D. VULNERABILITY ASSESSMENT	36
1. IDENTIFICATION OF ASSETS	36
2. POTENTIAL IMPACT OF HAZARDS	38
PART III - MULTI-JURISDICTIONAL RISK ANALYSIS.....	39
A. COUNTY-WIDE CONCERNS	39
1. TRANSPORTATION	39
2. UTILITIES AND COMMUNICATION	39
B. LOCAL CONCERNS	40
C. INDIVIDUAL PARTNER CONCERNS	40
1. CLALLAM COUNTY	40
2. CITY OF FORKS (AND WEST COUNTY)	40
3. CITY OF PORT ANGELES	41
4. CITY OF SEQUIM	42
5. PORT OF PORT ANGELES	42
6. SPECIAL PURPOSE DISTRICTS & PRIVATE FACILITIES	42
PART IV - MITIGATION STRATEGIES.....	43
A. GOALS AND OBJECTIVES	43

1. DEVELOPMENT OF GOALS AND OBJECTIVES	43
2. METHODOLOGY TO IDENTIFY MITIGATION MEASURES	43
3. PRIORITIZATION METHODOLOGY	44
B. MITIGATION STRATEGIES	46
1. CITY OF FORKS	47
2. CITY OF PORT ANGELES	52
3. CITY OF SEQUIM	64
4. CLALLAM COUNTY	68
5. OLYMPIC MEDICAL CENTER	80
6. PENINSULA COLLEGE	84
7. PORT OF PORT ANGELES	88
8. PUBLIC UTILITY DISTRICT NO. 1 OF CLALLAM COUNTY	91
PART V - PLAN IMPLEMENTATION AND MAINTENANCE.....	94
A. ADOPTION OF PLAN BY THE LOCAL GOVERNMENT BODIES	94
B. METHOD/SCHEDULE TO MONITOR, EVALUATE & UPDATE THE PLAN	94
2. City of Sequim	95
3. City of Port Angeles	95
4. Clallam County	95
5. Olympic Medical Center	96
6. Peninsula College	96
7. Port of Port Angeles	97
8. Public Utility District	97
APPENDICES	98
APPENDIX A - AGENDAS, MINUTES, PUBLIC NOTICES OF MEETINGS.....	99
APPENDIX B – ACRONYMS & REFERENCES.....	118
APPENDIX C – TABLES & ILLUSTRATIONS.....	123
APPENDIX D – AGENCY RECORDS OF ADOPTION.....	138
APPENDIX E – MAPS.....	142

PART I - PLANNING PROCESS



LAKE PLEASANT, JANUARY 2009

A. DESCRIPTION OF PROCESS

A kick-off meeting for the Hazard Mitigation Plan was held by Clallam County on July 1, 2009 and attended by representatives from all previously participating organizations except City of Forks and Peninsula College. Phone conversations were held with the two absent entities and both indicated they would participate.

The original plan partners included a total of forty-six projects. Of those projects, twenty-eight are completed. The updated plan retains some of the original projects, now updated, and adds seventy-six new projects. Several of the new projects are for studies to gain more information such as Clallam County's Project #2 to conduct an inventory of dikes, levees and flood protection structures in the county to assess protection levels and determine responsibility for long-term maintenance. Others, like installing a second electrical supply for a critical structure, are necessary for immediate mitigation due to our fragile infrastructure.

Jamestown S'Klallam Tribe, who participated in the 2004 plan, was contacted and they are contracting independently to prepare their own plan as is the Makah Tribe and the Lower Elwha Tribe. We met Colleen Jollie and Suzanne Taylor, both planners with WHPacific, who have been contracted by the Lower Elwha Tribe to write their Hazard Mitigation Plan. We will be providing any information or assistance that they need to prepare their plan.

In an effort to include more plan participants, we contacted Crescent Water Association, the Clallam County Public Utility District and Port Angeles School District #121 as potential new partners in

the Hazard Mitigation plan.

Crescent Water Association had storm damage in 2007 and 2008 that seriously impacted their customers and they are looking forward toward to participating in a process that may result in grant funding to mitigate future damage. They plan to join in 2010 after we have approval of our updated plan.

Clallam County PUD submitted four new projects two of which improve the quality and reliability of their water supply. The third project improves electrical reliability in areas that have suffered repeated storm damage and the fourth is to develop a plan for an area subject to water shortages in the dry season. They decided to join during the update process and plan to be full and active participants during the next five years.

Port Angeles School District #121 hired BLRB Architects to complete a comprehensive facilities assessment of all their plant facilities, grading mechanical systems, fire, seismic, site safety and utilities efficiency and safety. This report, finished in January, 2008, is listed in the reference section. After the first of the year, members of the Steering Committee will contact all school districts in the county and endeavor to gain their participation.

A late fall meeting is scheduled with all the fire chiefs in the county to discuss the update of the Hazard Mitigation Plan, its purpose and how their fire districts can become active partners in the updated plan.

1. PLAN PREPARATION

The 2004 plan was prepared through a contract with GeoEngineers who was primarily responsible for preparation of the plan and the GIS data included. The plan partners provided some staff time for data acquisition and coordinated the public outreach involvement.

The 2009 plan was prepared without the aid of a contractor. Several new partners have joined in participating with the development of this plan and they are listed as members of the Steering Committee in the chart on page three. This fulfills one of the original, primary goals of Clallam County.

2. PLAN DEVELOPMENT

This document is a multi-jurisdictional local mitigation plan led by Clallam County's Emergency Management Division. The plan development process used three outreach vehicles. The primary vehicle has been a Steering Committee, consisting of a representative from each partner, as well as

six representatives of Clallam County representing the Emergency Management Division (EMD), Community Development (DCD) and Public Works (PW). Representing the City of Forks was the police chief and city attorney, representing the City of Port Angeles was the fire chief who is also the emergency manager, and representing the City of Sequim was a police officer, who is the emergency management coordinator and public works director. The Port of Port Angeles, Peninsula College, the Public Utility District and Olympic Medical Center all sent representation to serve on the committee. The Port sent a public works employee, the college sent their emergency coordinator, an operations manager from the PUD and an emergency manager from the hospital completed the group. We already have agreement from a school district and several water districts to participate in the next update and revision round beginning after approval of this update.

In addition to the steering committee, meetings were also held among the public works employees in the City of Sequim and Port Angeles to discuss the components of the plan and to get their input on what they would like included in this plan and to start working on gathering data and planning strategies toward the next update in five years. The director, planning manager, and building official from the Department of Community Development and the utilities manager from Public Works met to prepare the National Flood Insurance Program portion to be included in this plan.

3. STEERING COMMITTEE

Penelope Linterman, Program Coordinator for the Emergency Management Division, was the main contact for Clallam County. A Steering Committee was formed at the beginning of the process in July 2009 and the members and their respective affiliations are listed below.

The Washington State Department of Transportation (WSDOT) cooperated by providing information on bridges, highways and their maintenance plans.

The Port of Port Angeles, Peninsula College, Public Utility District, and Olympic Medical Center are all Special Purpose Districts. As such, they rely on emergency personnel from other jurisdictions; e.g., local fire districts, city or county law enforcement and Washington State Patrol.

Other vehicles included public meetings with the Clallam County Board of Commissioners, and the City Council for City of Port Angeles during which mitigation plans and strategies were discussed. We also posted the draft plan on county's website with a request for the public to submit direct comment or to pose questions. A draft plan was submitted to Clallam County Board of Commissioners and the public for review in September 2009. It was submitted to WA State EMD in November 2009 for review. In development of the plan, the Steering Committee also reviewed all the documents listed on the Reference page included in Appendix B.

HAZARD MITIGATION PLAN STEER COMMITTEE

<u>Affiliation (Partners)</u>	<u>Name</u>	<u>Title</u>
City of Forks	Rod Fleck	Attorney/Planner
	Mike Powell	Police Chief
City of Port Angeles	Dan McKeen	Fire Chief
City of Sequim	Maris Turner	EM/Police Officer
	Ben Rankin	PW Director
Clallam County	Cathy Lear	Salmon Recovery Plnr
	Penny Linterman	Program Coordinator
	Bob Martin	Utilities Manager
	John Miller	Director DCD
	Tom Shindler	Mapping/GIS DCD
	Jamye Wisecup	Program Coordinator
Port of Port Angeles	Jesse Waknitz	Public Works
Peninsula College	Stephanie Supko	EM Coordinator
Public Utility District (new partner)	Larry Morris	Operations Supt
Olympic Medical Center	Tom Oblak	Emergency Serv Dir
	Mike Wolniewicz	Hazmat Coordinator

4. STEERING COMMITTEE MEETINGS

The Steering Committee met on July 1, July 15, July 29, August 12, September 9, and September 30, 2009. The agendas and minutes of the Steering Committee are provided in Appendix A as well as additional comment and input to the draft plan gathered as a result of these meetings.

5. PROCEDURE TO ADD AN ORGANIZATION TO THE PLAN

1. The organization wishing to join the plan contacts the Clallam County Emergency Management Division with the request to become a participant of the plan.
2. Clallam County Emergency Management provides the organization with a copy of the approved plan, planning requirements and any other pertinent data.
3. The organization reviews the plan and develops the portions of the plan that are specific to the community as directed by Clallam County Emergency Management staff. This portion of the plan must meet the requirements of the current FEMA Local Multi-Hazard Mitigation Planning Guidance including a public process.

4. The new organization submits its portions of the plan to the Clallam County Emergency Management Division and the new organization's plan is forwarded to the State Hazard Mitigation Program Manager for review and compliance with current FEMA Local Multi-Hazard Mitigation Planning Guidance.
5. The State Hazard Mitigation Program Manager reviews the new organization's plan for compliance with current local Multi-Hazard Mitigation Planning Guidance in conjunction with the Clallam County Natural Hazards Mitigation Plan. If the new organization's plan does not meet the required standard, the State Hazard Mitigation Program Manager will work with the community to resolve issues until it does.
6. The State Hazard Mitigation Program Manager forwards the new organization's plan to FEMA Region X for review and approval.
7. Upon approval from FEMA Region X, the new organization is considered part of the Clallam County Natural Hazards Mitigation Plan and will comply with the updated schedule of the plan and the Clallam County Natural Hazards Mitigation Planning Committee.

Note: This procedure was developed by the Skagit Natural Hazards Planning Committee in cooperation with the WA State Military Dept, Emergency Management Division as part of their Hazard Mitigation Plan in 2003. We have adapted it for our use and inclusion in our updated plan of 2010.

6. PUBLIC INVOLVEMENT

Public input was requested at public meetings of the Clallam County Board of Commissioners, City of Port Angeles City Council and posting the draft plan on the county website. At the same time, a media release announced that the draft plan was on the website and available for comment and the document was listed on our opening web page under "current issues." Public meeting notices, meeting agendas and minutes are provided in Appendix A as well as a complete list of comments received from the website.

The planning process has been designed to build on existing plans and resources. During our scheduled meetings, we discussed many ways to improve the data that goes into the Hazard Mitigation Plan as well as identifying more partners we'd like to include and improving ways of showing hazards related to present infrastructure.

After completing this update and getting our plan approved by State EMD and FEMA, we plan to meet quarterly over the next term and further develop these ideas and determine which ones we want to develop and how best to gather the information and present it so that the next update is even more meaningful in providing guidance to current and future plan participants. All plan participants expressed an interest in continuing to work on the plan after the update, its value to all

departments within a partner's sphere and how it can be used in the future to determine spending priorities and how to leverage them with available mitigation funds.

B. PLAN ORGANIZATION

The Steering Committee requested updates for the projects of all partners in the 2004 plan and the outcomes are included as part of each original project in each partner's project section. Some projects from the 2004 plan were retained and revised with new information and marked as "Revised 2010." This plan's organization and contents are as follows:

PART I – PLANNING PROCESS

- A. Planning Process
- B. Plan Organization

PART II – RISK ANALYSIS

- A. Community Profile (a new section)
- B. Risk Assessment
- C. Profiles of Key Hazards
- D. Vulnerability Assessment

PART III – MULTI-JURISDICTIONAL RISK ANALYSIS

- A. County-wise concerns
- B. Local concerns
- C. Individual partner concerns

PART IV - MITIGATION STRATEGIES

- A. Goals and objectives
- B. Selected projects

APPENDICES

- Appendix A – Agendas, minutes, public meeting notices, and comments received from our website, *clallam.net*
- Appendix B – Acronym & Reference Page
- Appendix C – Tables & Illustration
- Appendix D – Agency Records of HMP Adoption
- Appendix E - Maps

PART II – RISK ANALYSIS

A. COMMUNITY PROFILE

The following section describes Clallam County from a number of perspectives in order to help define and understand the County's sensitivity and resilience to natural hazards. Sensitivity factors can be defined as those community assets and characteristics that may be impacted by natural hazards (e.g., special populations, economic factors, and historic and cultural resources). Community resilience factors can be defined as the community's ability to manage risk and adapt to hazard event impacts (e.g., governmental structure, agency missions and directives, and plans, policies, and programs).

The information in this section represents a snapshot in time of the current sensitivity and resilience factors in the County when the plan was updated. The information documented below, along with the hazard assessments should be used as the local level rationale for the risk reduction actions identified in each agency's projects.

1. GEOGRAPHY & CLIMATE*

Clallam County is endowed with one of the most striking natural settings in the nation. The mild, maritime climate and amazing diversity of natural landscapes create a uniquely desirable place to live and work. The geographical profile of Clallam County shows an elongated area eighty miles in length and thirty-six miles wide located in the northwest corner of Washington State. Because of the Olympic Mountain range, transportation routes are restricted to a narrow portion of the coastal shelf. A single two-lane highway (US Highway 101) transects the county from east to west, with an additional two-lane highway connecting with the northwest portion (State Routes 110, 112, 113 and 117). Various county roads and city streets make up the remainder.

Airports with hard surface runways are located in Port Angeles, Sequim, Forks, Diamond Point, Sekiu, Quillayute, and the US Coast Guard station on Ediz Hook. The Port Angeles harbor is classified as a deep water seaport. There are one hundred and eighty miles of open coastline adjacent to major international shipping lanes, all shipping enroute to Seattle, Tacoma, upper Puget Sound and Vancouver, BC, Canada. Moist winds from the Pacific Ocean bring large amounts of precipitation to Clallam County.

The geography includes coastal plains and the Olympic Mountains. The Olympic Mountains reach elevations of nearly eight thousand feet, and are deeply incised by rivers. The area is impacted by winter storms that move inland from over the ocean, resulting in frequent heavy precipitation and winds of gale force. Wind velocities in the lower elevations can be expected to reach ninety to one hundred miles per hour once in a hundred years. Wind velocities in excess of one hundred miles per

hour occur in the higher elevations almost every winter. * From “Quality of Life,” Clallam County, 2008; see reference section.

The climate of Clallam County is considered to be moderate. The average maximum temperature year round is 57.7° F and the lowest average temperature is 41.2° F. The city of Sequim has the least amount of average rainfall at 16.45” and Forks has the most rainfall at 117.74” annually.

Period of Record: 8/1/1933 to 3/31/2008 for Port Angeles*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	44.9	47.4	50.2	54.9	60.3	64.2	67.9	67.8	65.0	57.1	49.6	46.0	56.3
Average Min. Temperature (F)	34.1	35.4	36.9	40.3	44.9	49.0	51.7	51.6	48.7	43.4	38.2	35.5	42.5
Average Total Precipitation (in.)	3.91	2.71	2.10	1.26	0.97	0.86	0.53	0.72	1.09	2.51	4.01	4.32	24.99

Period of Record: 11/1/1907 to 12/31/2008 for Forks*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	44.8	48.7	51.7	56.9	63.0	67.0	71.6	72.6	69.2	60.4	50.7	45.6	58.5
Average Min. Temperature (F)	33.4	34.2	35.3	37.6	42.0	46.4	49.2	49.6	46.7	42.3	37.3	34.4	40.7
Average Total Precipitation (in.)	17.69	13.77	12.84	8.55	5.20	3.48	2.31	2.49	4.76	11.67	16.21	18.78	117.74

Period of Record: 6/1/1916 to 9/30/2008 for Sequim*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	44.4	48.3	51.7	57.0	62.7	67.2	71.3	71.8	67.8	59.3	50.7	46.1	58.2
Average Min. Temperature (F)	31.2	33.0	34.3	38.1	42.7	47.4	49.8	50.2	47.4	41.4	35.9	33.1	40.4
Average Total Precipitation (in.)	2.22	1.48	1.28	1.01	0.93	0.96	0.51	0.66	1.02	1.47	2.19	2.71	16.45

* all climate data from the Western Regional Climate Center DRI website (see reference page)

The “rainforest” area along the western slopes of the Olympic Mountains receives the heaviest precipitation in the continental United States. Annual precipitation ranges from seventy to one hundred inches over the Coastal Plains to one hundred fifty inches or more along the windward slopes of the mountains. Winter season snowfall ranges from ten to thirty inches in the lower elevations and between two hundred fifty to five hundred inches in the higher mountains. In the lower elevations, snow melts rather quickly and depths seldom exceed six to fifteen inches. In midwinter, the snowline in the Olympic Mountains is between fifteen hundred and three thousand feet above sea level and the snowpack at Hurricane Ridge in Olympic National Park averages four hundred inches. The higher ridges are covered with snow from November until June. In winter, the warmer areas are along the coast.

The “rainshadow” area includes lower elevations along the northeastern slope of the Olympic Mountains extending eastward along the Strait of Juan de Fuca from near Port Angeles, east to Whidbey Island and then northward to the Strait of Juan de Fuca. The Olympic Mountains and the extension of the Coastal Range on Vancouver Island to the north shield this area from winter storms moving inland from over the ocean. This belt in the “rain shadow” of the Olympic Mountains is the driest area in western Washington. The average annual precipitation ranges from about eighteen inches in Sequim to between twenty-five and thirty inches in Port Angeles and over one hundred and forty-five inches on the western part of the county. Measurable precipitation is recorded on three to five days each month in summer and on seventeen to twenty-two days in winter. Rainfall in this area frequently receives drizzle or light rain while other localities in the region are experiencing light to moderate rainfall. Snowfall is light in the lower elevations adjacent to the water, increasing with distance from the water and rise in terrain.

2. POPULATION & DEMOGRAPHICS

Clallam County is known as a recreational area and hosts over two and one-half million visitors annually. We are home to miles of puzzle-like shorelines, alpine meadows crowned with glaciers and dense rainforest valleys. Olympic National Park has almost a million acres to explore along with Olympic National Forest and dozens of state, county, and city parks.

Population in 2000 was sixty-eight thousand, five hundred and continues to increase steadily. In 2008, the population is estimated at sixty-nine thousand, two hundred and one which is just over a one percent increase. Twenty percent of the population is disabled with seven point six percent of those being over the age of sixty-five. By 2006, median household income had increased twenty-three percent to \$47,594. Unemployment in 2008 is seven point one percent, slightly less than 2000’s rate of eight percent. Below is a chart* showing the age distribution of the county residents:

Age	Population 2000	Population 2008	Percent change
0 – 15	14,094	10,967	-22.2%
15 – 19	2,469	4,623	87.2%
20 – 24	2,251	3,255	44.6%
25 – 34	5,929	5,750	-3%
35 – 44	8,758	10,687	22%
45 – 54	9,604	7,775	-19%
55 – 59	4,086	5,726	40.1%
60 - 64	3,567	5,402	51.4%
65+	13,787	15,016	9.1%
Median age		47	

*Information in chart is from the US Bureau of the Census, 2000 and 2008 Clallam Community Profile

3. 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 the plate tectonics and earthquake risk.

In 2008, Clallam County had 34,995 housing units up 12.3% since 2000. The median home price in 2006 was \$231,500. Sixty one percent of the county's housing stock was built prior to 1980 before stronger seismic building codes were put into place.

4. TRANSPORTATION & COMMUTING PATTERNS

Of the estimated 69,000 people in Clallam County, forty percent dwell in the incorporated cities of Forks, Port Angeles and Sequim. Other unincorporated communities include Clallam Bay – Sekiu, Neah Bay, Joyce and Carlsborg. The population density per square mile is relatively low at approximately 39.4 persons per square mile.

Transportation routes are restricted to the coastal shelf because of the Olympic Mountain range. US Highway 101, a two-lane highway, is the main east-west transportation route across the county and is vulnerable to multiple hazards. Additional State Routes 110, 112, 113 and 117 and various county roads and city streets are also important transportation routes. Every winter, landslides, erosion, standing water and fallen trees affect the population's ability to travel the county. During the declared disaster of 2008, the city of Forks was completely cut off by landslides blocking Highway 101 to the north and to the south. Gasoline was rationed, the hospital was requesting propane and the police chief was ready to close the grocery store to implement rationing. Partial access was restored after three days but portions of the community remained cutoff for an extended period. Most people commute to and from work in their private cars. Clallam County Transit provides economical and efficient transport throughout the county unless they are impacted by natural hazards. ParaTransit provides services to the disabled population by appointment.

5. TOURISM

Clallam County is home to Olympic National Park which receives over three million visitors each year to enjoy the mountains, ocean beaches, rainforest and wilderness areas. Several annual festivals highlighting various interests occur all year with some attracting several thousand people.

The Juan de Fuca Festival over Memorial Day weekend followed by the Arts in Action each attracts about fifteen thousand people. July starts with the Irrigation Festival followed in mid-July by the Sequim Lavender Festival attracting thirty thousand. Native American events like Makah Days and the annual Canoe Journey, an international festival, contribute to the nearly continuous tourist activity throughout the year.

B. RISK ASSESSMENT

The purpose of the risk assessment is to define where hazards occur and their characteristics. Underlying geologic conditions or the natural setting has a significant influence on the location, type, and severity of damage. In Clallam County, the consequences of the damage also are dependent on where human development and transportation facilities are located relative to geographic features.

Our jurisdictions are small with limited resources in personnel and equipment and are extended to the thinnest coverage on many occasions. In addition, our infrastructure, in most cases, is older than fifty years and is in need of upgrading. Due to our limited personnel, we have not updated the critical facility inventory that was begun in the 2004 edition of this plan. The Steering Committee is favorable to addressing this deficiency and is committed to prepare a work plan to address this specifically in our next update in 2015.

1. DESCRIPTION OF REGIONAL CONDITIONS

Understanding of the regional conditions in Clallam County is based on information in the Clallam County Hazard Inventory and Vulnerability Analysis (HIVA, 2004). Our intent over the next review cycle is to combine updated HIVA information into the Hazard Mitigation Plan and then maintain only the HMP. After that is accomplished, we will include technological hazards.

In general, the Clallam County Comprehensive Land Use and Zoning map, together with supporting plan policies and development regulations designate and direct rural and urban growth to areas less impacted by hazard areas. For example, over fifty-six percent of the county is designated as commercial forest land. These lands are mostly devoid of development, but contain significant hazard areas due to steep slopes and location along waterways.

Where floodplain and other hazards are located in rural and urban areas, development within or adjacent to such areas are regulated under the county's Critical Areas Code and the Shoreline Master Program. Here are references to key provisions of the Clallam County Critical Areas Code and shoreline Master Program, as well as county and state building codes that address these hazards:

Capabilities				
Hazards	Critical Areas Ordinance	Shoreline Master Program	County Bldg Code	State building Code
Drought	n/a	n/a	n/a	n/a
Landslide/erosion	<u>Part 4</u> – Geologic Hazardous Areas	<u>Chpts 4.01-4.13</u> ; contains natural system regulations. <u>Chpt 5</u> contains additional policies and regulations applicable to specific areas.	Ch 21.01.100	Ch 18 2006 IBC Ch 4 2006 IRC
Riverine & coastal processes	<u>Part 3</u> – Aquatic & wildlife habitat conservation areas; contains designation criteria and protection standards (buffers) for aquatic systems and fish and wild life habitat. <u>Part 4</u> – Geologic Hazardous Areas; addresses protection standards for channel meanders, stream /river ravines, marine bluffs <u>Part 5</u> – Pertains to frequently flooded areas	n/a	Ch 21.01.040	Ch 16 2006 IBC Ch 3 2006 IRC
Seismic related	<u>Part 4</u> – Geologic Hazardous Areas	n/a	Ch 21.01	Ch 16 2006 IBC Ch 3 2006 IRC
Severe storm	n/a	n/a	Ch 21.01	Ch 16 2006 IBC Ch 3 2006 IRC
Tsunami	n/a	n/a	n/a	n/a
Urban/wildland fire	n/a	n/a	This code is not adopted.	This code is not adopted.
Volcano	n/a	n/a	n/a	n/a

2. IDENTIFICATION OF KEY HAZARDS

Federal Emergency Management Act (FEMA) guidance (2008) for plan criteria under the Disaster Mitigation Act (DMA) 2000 only addresses natural hazards, not human-induced hazards. Therefore, Clallam County has chosen to prepare this plan for natural hazard mitigation only at this time.

Clallam County, however, does recognize the value of addressing the human-induced hazards, such as oil spills that routinely plague the Strait of Juan de Fuca within the Olympic region. Mitigation plans that can reduce the potential impacts of human induced hazards in addition to natural hazards make sense. After updating this plan, the hazard mitigation strategies could be broadened by including human-induced hazards at a future time.

Clallam County has identified and, based on best available science (BAS) adopted the following critical natural hazard areas as those prone to: frequent flooding, and seismic, landslide or erosion activity. Based on a review of the critical areas available as GIS layers from Clallam County, the following key hazards were identified: riverine flooding and channel migration, landslide and erosion, and seismic (earthquake and tsunami). In their first meeting on July 1, 2009, the Steering Committee identified other hazards, based on past damages, including flooding from high tides (coastal processes), severe storms (wind, rain and snow), and urban and wildland fires. Table II-2, Description of Key Hazards, describes the key hazards, and indicates how and why the key hazards were identified (available in Appendix C).

Details about the hazard extent and characteristics, as well as previous occurrences and losses, were available from a wide number of sources, which are cited in the reference section of this document. They include published and unpublished information from FEMA, the State Emergency Management Office, members of the Steering Committee, past disaster declarations in the County, the County Roads Engineer, WSDOT, Washington State Department of Natural Resources (DNR), public input, interview with Forks' Timber Museum, newspaper articles, and review of (a) the 2004 Clallam County HIVA, (b) Dungeness River Comprehensive Flood Hazard Management Plan 2009, (c) City of Forks Comprehensive Flood Hazard Management Plan, (d) Elwha River Water Quality Mitigation Project Planning Report, (e) State Route (SR) 112 MP 2.5 to MP 4.0 Geological Investigation memorandum and (f) current FEMA Flood Insurance Rating Maps (FIRM) information (included with the County's GIS flooding layer).

The Plan partners provided the identity and locations of their critical facilities, and the County and Port Angeles GIS departments mapped the infrastructure, critical facilities and land uses. The Steering Committee provided data so that the relative risk from each hazard could be assessed and tabulated, as summarized in Table II-2, Description of Key Hazards.

The Washington State HIVA (2001) presents the major hazards present in Washington State. The natural hazards include the following:

- Avalanche
- Drought
- Landslide / erosion
- Riverine and Coastal Processes (flooding)
- Seismic-related
- Severe Storm
- Tsunami (for our county)
- Urban / Wildland Fire
- Volcano

As discussed in Table II-2, key hazards in Clallam County include most of the hazards in the Washington State HIVA list of major hazards but we are also at risk for tsunamis due to our long, exposed coastline and low coastal elevations. For that reason, we have amended the list and added tsunami as a natural hazard risk in our plan.

The rationale for not selecting the following major hazard as a key hazard in Clallam County is provided below.

Avalanche

An avalanche is a mass of loosened snow or ice that suddenly and swiftly slides down a mountain, often growing as it descends. An avalanche collects additional material such as mud, rocks, trees and debris as it slides (King County Regional Hazard Mitigation Plan, draft September 19, 2003). While avalanches in the high alpine areas of the Olympic Mountains do occur (Clallam County HIVA, 2004, avalanches do not impact the inhabited areas of the county included in this plan. Therefore, avalanches are not considered a potential hazard within the study area.

C. PROFILES OF KEY HAZARDS

1. DROUGHT

i. DESCRIPTION OF HAZARD

Drought is a condition of climatic dryness that is severe enough to reduce soil moisture and water and snow levels below the minimum necessary for sustaining plant, animal, and economic systems.

ii. HISTORY OF OCCURANCES

The Washington State Legislature in 1989 gave permanent drought relief authority to the Department of Ecology and enabled them to issue orders declaring drought emergencies.

Clallam County has a maritime climate characterized by cool, dry summers and mild, wet winters. Higher elevations are usually covered with snow from November until June, with depths ranging from 10 to 15 feet. We rely on that snow pack to maintain the natural environment for protection of vegetation, wildlife, and waterways.

Years of low precipitation and snow pack have affected the beauty of our natural environment as well as jeopardizing our source of power and drinking water. Three energy curtailments, during drought periods prior to 1977, caused temporary unemployment.

During the summer of 2007, the Makah Indian Reservation had a declared emergency due to a water shortage and used rationing and a desalination plant on loan from the Navy to weather the crisis. Since that time they have increased their water storage capacity and have not suffered any further shortage. It's unlikely that the Makah Tribe will experience a water shortage in the future as they have mitigated a long-term solution to their problem.

Droughts impact individuals (farm owners, tenants, and farm laborers), the agricultural industry, and other agriculture-related sectors. Lack of snow pack has forced ski resorts into bankruptcy. There is increased danger of forest and wildland fires. Millions of board feet of timber have been lost. Loss of forests and trees increases erosion causing serious damage to aquatic life, irrigation, and power development by heavy silting of streams, reservoirs, and rivers.

Problems of domestic and municipal water supplies are historically corrected by building another reservoir, a larger pipeline, a new well, or some other facility. Short-term measures, such as using large capacity water tankers to supply domestic potable water, have also been used. Low stream

flows have created high temperatures, oxygen depletion, disease, and lack of spawning areas for our fish resources.

iii. LIKELIHOOD OF RECURRENCE

In the eastern area of the county where rainfall is low and there is rapid development and population increase, a study was prepared by Peninsula College and can be found listed in Appendix B. The report is titled, “Wildfire Hazard Assessment and the Wildland-Urban Interface of the North Olympic Peninsula, WA.” This study discusses the increased hazard level of the likelihood of wildland/urban interface fire hazard even though it would still be defined as “low” for probability of future occurrence as defined in Table II-2, Appendix C. It was prepared.

Other potential water shortage issues are addressed in the projects section under the City of Sequim.

2. EARTHQUAKE / SEISMIC-RELATED

i. DESCRIPTION OF HAZARD

Seismic-related hazards in Clallam County include ground motion from shallow (less than 20 miles deep) or deep faults; liquefaction and differential settling of soil in areas with saturated sand, silt or gravel; and tsunamis, long-period waves that result from predominantly submarine seismic activities. Earthquakes also can cause damage by triggering landslides or bluff failure. High-magnitude (8 to 9+) earthquakes are possible in Clallam County when the Juan de Fuca slips beneath the North American plates.

It is well known that the Cascadia Subduction Zone is located along our outer coast and runs from Northern Vancouver Island to Northern California where it meets the San Andreas Fault. “It is one of the world’s most treacherous faults, capable of unleashing megaquakes and tsunamis on a par with the 2004 Sumatra disaster.”¹

New research conducted by the Pacific Northwest Seismic Network at the University of Washington (www.ess.washington.edu/SEIS/PNSN/) and the Pacific Northwest Geodetic Array (www.panga.org) suggests that the rupture of the fault will occur fifty miles further inland instead of off the Washington coast as previously believed. This would place the rupture right under our most populous area where vital infrastructure is concentrated. In considering the natural hazards that occur in our area, an earthquake would have devastating consequences.

“For communities on the open-ocean and Strait of Juan de Fuca coasts of Washington, the most significant tsunami threat is associated with local earthquakes emanating along the Cascadia Subduction Zone (CSZ), the interface of the North America and Juan de Fuca

tectonic plates that extends more than 1,000 kilometers from northern California to southern British Columbia (Rogers and others, 1996; fig. 1),”

suggests Nathan Wood and Christopher Soulard in a 2008 report titled, “Variations in Community Exposure and Sensitivity to Tsunami Hazards on the Open-Ocean and Strait of Juan de Fuca Coasts of Washington,” page 2. New cooperative research from USGS, University of Washington and Pacific North West Seismic Network gathered as a result of deploying sixty seismometers over the Olympic Peninsula indicate that the Juan de Fuca plate extends much further under the Olympic Peninsula than previously thought.

“Based on geologic evidence along the Washington coast, the CSZ has ruptured and created tsunamis at least seven times in the past 3,500 years and has a considerable range in recurrence intervals, from as little as 140 years between events to more than 1,000 years (Atwater and Hemphill-Haley, 1997; Clague 1997; Goldfinger and others, 2003). The last CSZ-related earthquake is believed to have occurred on January 26, 1700 (Satake and others, 1996; Jacoby and others, 1997; Atwater and others, 2005; Williams and others, 2005; Kilfeather and others, 2007), and researchers predict a 10 to 14 percent chance that another could occur in the next 50 years (Petersen and others, 2002). Future CSZ-related earthquakes have been predicted to be magnitude 8 or greater and could subject communities on the Washington open-ocean and Strait of Juan de Fuca coasts to intense ground shaking, subsidence, landslides, and liquefaction of unconsolidated sediments. In addition, a series of tsunami waves possibly 8 meters or higher are predicted to inundate the outer Washington coast in 30 to 60 minutes after initial ground shaking in a magnitude 8 or larger earthquake (Myers and others, 1999; Walsh and others, 2000; Washington Emergency Management Division, 2004; CREW, 2005; Geist, 2005), (Wood and Soulard, p. 2).”¹ “Megaquake could strike closer to home,” Seattle Times, November 17, 2009.

Tsunami hazard areas are concentrated around Cape Flattery, along the Pacific Coast, and sporadically along the coastline of the Strait of Juan de Fuca, including the Sekiu-Clallam Bay community, the Lower Elwha Klallam Tribal lands, and the low-lying area north of Sequim. The direction and wave energy of a tsunami would affect the erosion of the shoreline and height of run up on the shoreline, in addition to effects at the mouths of rivers (Noson, et al., 1988; Wiegel, 1970; and Wilson and Torum, 1972).

ii. HISTORY OF OCCURRENCES IN AREA

The most recent earthquake event that caused damage in Clallam County was the 2001 Nisqually Earthquake. Small earthquakes occur daily throughout the region and are seldom felt by residents. Over the past one hundred and twenty-five years, there have been nine earthquakes with a

magnitude greater than 6.0 in the area that we consider the Northwest. Six of those large quakes had impact directly on the Olympic Peninsula as recorded by eye witness accounts.

On January 12, 1909 there was a magnitude 6.0 located near San Juan Island. Other quakes include a magnitude 6.1 on July 16, 1939 near Vashon Island, a 6.2 on November 12, 2939 near Bremerton, a 7.1 on April 13, 1949 in Olympia, and a 6.5 on April 29, 1965 in the Seattle-Tacoma area.

The **Pacific Northwest Seismic Network** maintains an extensive catalog of earthquake events from 1793 to the present. One transcript describing the widespread evidence of the 1909 quake reads as follows:

“1909 JANUARY 11. 3:44 p.m. A tremor, whose origin seems to have been in the Gulf Islands between Victoria and Bellingham, was felt over an area greater than 25,000 square miles. The intensity near the origin was of the order of VI.

At Victoria, where the vibration lasted from 10 to 20 seconds, the most serious damage reported was that of broken crockery. At Blaine walls were cracked; Bellingham reported sidewalks twisted; and at Anacortes the piers were damaged. Ladysmith, Nanaimo, and Alberni felt the tremor quite distinctly. Reports indicate that the earthquake was felt at Comox, Pachena Point, Bamfield, Sumas, Chilliwack, Hammond, Everett, Lopez, Port Townsend, Tacoma, and south to Portland, but was not felt as far east as Kelowna, Princeton or Vernon. It appears that placing the epicentre in the Gulf Islands area is as good an approximation as is possible, for no instrumental recording of the origin is available. Col., BSSA.”²

² Milne, W.G., 1956, Seismic Activity in Canada, west of the 113th meridian 1841-1951: Canada Dominion Obs. Pub., V. 18, No. 7, pp. 119-146

iii. LIKELIHOOD OF RECURRENCE

During the past five years, there has been continual research to determine previous unknown earthquakes and several new faults have been discovered in our region, according to Tim Walsh, Chief Hazards Geologist, WA State Department of Natural Resources but the probability of future occurrence of seismic-related hazard events is still “low” as defined in Table II-2, Appendix C.

3. RIVERINE AND COASTAL PROCESSES

i. DESCRIPTION OF HAZARD

Riverine and coastal processes result in (1) flooding by high water levels from heavy precipitation into rivers and streams, or by winds or barometric high tides in the large lakes and ocean, and (2) erosion from channel migration of rivers and streams.

The primary riverine hazards are associated with the following rivers and streams, generally from west to east: Quileute River, Bogachiel River, Calawah River, Sol Duc River, East Dickey Creek,

Sekiu River, Hoko River, Clallam River, Reed Creek, Elwha River, Morse Creek and Dungeness River. Riverine hazards extend across the County, but are primarily located near the mouths of the rivers in the northern portion of the County, and in the central and western portions of the County, along the extent of Highways 101, 110 and 110 Spur. Data from the “Dungeness River Comprehensive Flood Hazard Management Plan,” conducted by Clallam County indicates a trend of increasing peak flows for the Dungeness and Elwha rivers in Clallam County between 1924 and 2002. The data from the study is available at *clallam.net*.

Ediz Hook and parts of Port Angeles, and the Gibbon and Travis spits in the mouth of Sequim Bay may become inundated with high tides and storm surges. Much of the Clallam, Elwha and Dungeness tidal areas may be impacted by high tides and river flooding. Strong winds on Lake Crescent can cause flooding of the lake shorelines.



WASHOUT OF NICHOLS BRIDGE, DECEMBER 2008

ii. HISTORY OF OCCURRENCES IN AREA

Previous damages relative to flooding and channel migration events are included in Table II-3. The damages with the highest consequence, either related to the cost to repair or by the impact on human activities, were incurred during the 1979, 1990, 1996/1997 and 2008/2009 flood and severe storm events.

Historically, the most damage to life or property has occurred from flooding of the Bogachiel River, and flooding of the Kinkade Island and River's End segments of the Dungeness River.

Lower Bogachiel River

Channel migration in the floodplain has accounted for loss of property and transportation disruptions along the lower Bogachiel River. Additionally, State Route 110 is the primary access route to, and the route along which water is piped to, the Quileute Indian reservation and village of LaPush. On river right, the U.S. Army Corps of Engineers has built a dike that, in the events of the 2001-2002 seasons, was expanded from 1,500 feet to 2,300 feet under an emergency action. The purpose of the dike is to protect property and State Route 110.

Currently, a multi-agency group is working toward a solution to solve the chronic flooding of the Bogachiel River. The group has proposed purchasing affected properties and enlarging the culverts through which the river flows. A gauge has been installed on the bridge and a reach analysis is being conducted by WSDOT.

During October 2003 flooding, a truck and travel trailer was lost in the floodplain of the Bogachiel River when the driver attempted to outdrive a flooded side channel.

Kinkade Island Segment of Dungeness River

Located in the flood plain and meander hazard zone, Kinkade Island is highly vulnerable to flooding and erosion during high flows. Houses were built on the island in the years before Clallam County issued building permits.

Several flow paths throughout Kinkade Island receive flow from groundwater and surface water. Kinkade side channel is the largest of these, and at low flow periods can carry one-half to two thirds of the flow of the main channel. Erosion in recent events has increased channel capacity, enabling the Kinkade side channel to convey more flow.

At this time, large log jams at the head of the island limit migration of the main channel into the Kinkade side channel. During the 2001-2002 seasons, a Kinkade Island home and its access bridge were washed away in two separate flood events.

River's End Segment of the Dungeness River

Located at the mouth of the Dungeness River, River's End structures were built in the floodway and meander hazard zone of the river in the years before Clallam County issued building permits.

Early maps show the river channel sharply bending to the left. The river accesses this course during high flows. A dike built by the U.S. Army Corps of Engineers in the 1960s on the east side of the

river prevents any movement of the channel in that direction. A berm built on the west side protects River's End residents at low flows, but is overtopped, undermined, or washed away during higher flows. One residence was flooded eight times in seven years, and septic systems are in peril in the area from the floodway and a seasonally high water table.

Flood hazard mitigation and salmon recovery efforts have led to a buyout program for residents of River's End. Willing landowners are selling their property to the County and its partners in the project. After property acquisition, the area will be restored to floodplain and estuary. Not all targeted parcels have been purchased. There remain approximately 30 parcels that accommodate approximately 20 dwellings with some recreational vehicle sites with septic systems. Several of the septic systems are inadequate and the dwellings have been red tagged as a result. Other tanks must be pumped frequently.

Dungeness River Comprehensive Flood Hazard Management Plan Adopted

In 2009, Clallam County amended and updated the Dungeness River Comprehensive Flood Hazard Management Plan. The plan and amendments fulfill the required elements of Washington Administrative Code (WAC) Chapter 173-145-040 for plan elements and integrate Growth Management Act requirements under Revised Code of Washington (RCW) 36.70A.060 and Chapter 365.190 WAC.

The amendments reflect the updated guidelines of the Washington State Flood Control Assistance Account Program (FCAAP) to utilize an approach that integrates fish and wildlife habitat, watershed planning, growth management, and nonstructural elements into the management of flood hazards. By meeting the FCAAP requirements, Clallam County retains eligibility to apply for flood hazard reduction projects in the Dungeness River. The plan also meets requirements for programs for emergency responses during disasters.

The geographic scope of the plan includes the lower eleven miles of the Dungeness River and areas in or adjacent to the channel migration zone¹ and the 100-year flood plain of the Dungeness. The plan also includes coastal areas in the Sequim-Dungeness area within a tsunami hazard zone or as identified as flood hazard areas by the Federal Emergency Management Agency (FEMA). Riparian areas of the Dungeness River upstream of River Mile 11 are presently in private, state, or federal forest land, and it is assumed that upstream land use will not change in such a way that flood hazard is increased.

The plan identifies four major goals related to flood hazard reduction:

- Prevent loss of life and property from flooding.

- Integrate flood hazard reduction with efforts to preserve and restore river processes, critical habitats, and fish and wildlife.
- Support the river’s varied uses including agriculture, residential development, fish and wildlife habitat, water supply, open space, and recreation.
- Ensure that flood hazard management occurs in the context of an ongoing, systematic and comprehensive approach to Dungeness River basin management and preservation.

This plan is an advisory document prepared pursuant to RCW 86.12.200. Implementation of the Dungeness Comprehensive Flood Hazard Management Plan is subject to adequate staffing, funding, and partnerships with cooperating organizations. Implementation is further guided by other regulatory programs, such as the Clallam County Critical Areas Code and Shoreline Master Program. Updates and amendments to these regulatory programs, as recommended herein, are subject to state guidelines and requirements, and any regulatory changes to be adopted by Clallam County will follow public notification and hearing procedures prior to adoption.

Mitigation strategies and general recommendations and actions of the Dungeness River Comprehensive Flood Hazard Management Plan are included in the following:

Summary Of General Recommendations Table

Recommendation	Actions
<p>5.1.1 Utilize best available science to update maps of flood hazard areas and the channel migration zone.</p>	<ul style="list-style-type: none"> • Update maps of the Channel Migration Zone (CMZ). • Request update to FEMA maps of the 100-Yr Flood Plain. • Continue modeling and mapping studies and incorporate into land management activities.
<p>5.1.2 Protect people and property from erosion and flood hazards and protect habitat functions by updating and amending land use and related regulations.</p>	<ul style="list-style-type: none"> • Incorporate flood hazard management into amendments of Critical Areas Code and Shoreline Master Program. • Direct development away from the CMZ. • Establish aquatic habitat conservation area buffers from the edge of the CMZ. • Establish mitigation policies for upgrading degraded habitat in the CMZ and buffer areas. • Meet or exceed FEMA requirements. • Review and update regulatory standards applicable to levees, and conduct a comprehensive levee inventory.
<p>5.1.3 Improve ongoing education and outreach to existing and potential landowners along the</p>	<ul style="list-style-type: none"> • Develop and implement an ongoing outreach program for property owners along the river about development and land clearing constraints in and adjacent to the CMZ. • Continue and improve procedures to notify prospective buyers

Dungeness related to land development and stewardship.	<p>about potential flood hazards and land development requirements.</p> <ul style="list-style-type: none"> • Continue and expand technical assistance programs to improve stewardship.
5.1.4 Provide education and outreach about flood hazards and emergency preparedness.	<ul style="list-style-type: none"> • Conduct public education programs about flood risk and emergencies regularly through a variety of media, including the County’s website and annual mailings. • Emphasize implementation of the Map Your Neighborhood program along the river.
5.1.5 Continue programs to purchase high risk flood hazard and high value habitat areas.	<ul style="list-style-type: none"> • Seek and support funding programs to purchase properties at flood hazard risk. • Continue to implement the 2003 Dungeness Land Protection Strategy. • Enhance public access, parks, and recreational opportunities along the river.
5.1.6 Continue and expand monitoring and code compliance programs along the Dungeness River corridor.	<ul style="list-style-type: none"> • Conduct monitoring of land use and land cover along the Dungeness, particularly in high risk flood areas. • Emphasize outreach and education activities in the implementation of monitoring programs. • Continue annual airphoto and other monitoring actions of the Dungeness River corridor, and share among cooperating agencies for adaptive management.

Draft plans for the City of Forks (Bogachiel and Calawah Rivers), remain to be completed. These plans indicate the following:

- The most current FIRM maps for Clallam County were created in 1989. The largest historic floods of the Dungeness River have occurred about every decade, in 1956, 1968, 1974, 1980, 1991 and 2002.
- Severe floods in western Clallam County occurred in 1935, 1955 (most severe in recent history), 1956, 1968, 1979 and 1990. The estimated peak discharge of the Quileute River was 120,000 cubic feet per second (cfs), which exceeds the estimated 100-year flood discharge of 119,000 cfs.
- One fatality occurred in December 1979 as a result of flooding of the Bogachiel River at the U.S. Highway 101 bridge. The damage caused by the December 1979 floods resulted in construction of many of the structural flood control projects in western Clallam County.
- A 1999 report estimated that the 95 percent confidence limit on the 100-year flood that could be experienced on the Dungeness River is 11,400 cfs, which is significantly greater

than previous records. A flood of that magnitude would redefine the river morphology and overtop existing flood control structures.

- Flooding in November 1990 caused over \$800,000 in damage in the County.

Clallam County experienced damage during the Presidential declared October 2003 flooding (Federal Disaster 1499, declared November 7, 2003). Examples included the following:

- All major floodways flooded during this storm. Throughout the County, many of the floodplain fringes that typically do not become inundated were very wet.
- Bogachiel River, as described above.
- LaPush, at the west end of Highway 110 on the Quileute River, was evacuated and homes were flooded.
- The U.S. Army Corps dike at the River’s End area of the Dungeness River breached and flooded the floodplain.
- The Lower Elwha River flooded the road into the Lower Elwha Reservation.
- Across the county, some roads closed and basements of residences flooded.
- The Pysht River flooded at the intersection with Highways 112 and 113, isolating access in the west county along Highway 112.
- Areas of the county that were isolated from road failure left approximately 5,000 residents stranded in or from their homes.

Most recently, Clallam County experienced severe damage between December 2008 and January 2009 with severe winter storms, record snowfall, then thawing causing flooding and mudslides. This was Presidential declared disaster DR-1817 and DR-1825.

- Flooding in December 2008 – January 2009 caused over \$3M in damages.

Participation in the National Flood Insurance Program

Clallam County has been a participant in the National Flood Insurance Program (NFIP) since 1975. The following is a matrix as of November 30, 2009 showing the number of NFIP policies in force in our county:

Community Name	Policies in-force	Insurance in-force whole \$	Written premium in-force
Clallam County	409	\$98,872,700	\$286,830
Forks, City of	5	\$781,700	\$4,763
Port Angeles, City of	21	\$6,456,800	\$29,963
Sequim, City of	10	\$2,555,700	\$5,726
Totals	445	\$108,666,900	\$327,282*

* NFIP Statistics report (see Appendix B)

Here is some additional information on the properties showing repetitive loss in Clallam County between 1979 and 2007:

Dt of Loss	Occupancy	Zone	Firm	Building Pmt	Contents Pmt	Bldg Value	Date of Loss	Zone	Firm	Building Pmt	Contents Pmt
02/27/1991	SINGLE FMLY	B	N	\$108,506	\$0	\$120,000	11/24/1990	B	N	\$7,583	\$0
02/04/1991	SINGLE FMLY	C	N	\$84,228	\$0	\$100,000	11/21/1990	C	N	\$17,538	\$11,900
12/03/2007	SINGLE FMLY	A07	N	\$1,569	\$0	\$114,998	10/17/2003	A07	N	\$19,820	\$0
12/15/1999	SINGLE FMLY	A	N	\$55,000	\$58,423	\$64,512	03/19/1997	A	N	\$4,129	\$0
01/12/1980	SINGLE FMLY	EMG	N	\$13,270	\$1,330	\$85,900	12/18/1979	EMG	N	\$23,116	\$10,000
01/15/2000	SINGLE FMLY	C	N	\$6,635	\$0	\$29,392	03/10/1999	C	N	\$4,999	\$0
				\$269,207	\$59,753					\$77,185	\$21,900

Six properties in Clallam County show repetitive loss from 1979 through 2007. The total amount for building repair was **\$346,392** and the total amount for contents was **\$81,653** for a total loss of **\$428,045** over the twenty-eight year period. No statistics were available from 2007 to the present and the current status of each property previously damaged is unknown.

Clallam County does not have data on the actual number of structures located within flood hazard areas shown on Flood Insurance Rate Maps (FIRM). As part of the County's most recent Biennial Report submitted to the Federal Emergency Management Agency it was estimated there were 700 lots in Clallam County containing residential or accessory structures that either: 1) contain 95% or more flood hazard areas; or 2) contain less than 0.5 acres of land outside of flood hazard areas. It is estimated that some or all of the structures on these 700 lots are located within or in proximity to flood hazard areas depicted on the FIRMs.

Clallam County does not currently participate in the NFIP Community Rating System (CRS). In Clallam County's first Hazard Mitigation Plan accepted in 2004, Clallam County identified participation in the CRS under NFIP as a project area. In 2005, the County undertook an evaluation into the potential benefits of participating in CRS. It was concluded that CRS would offer benefit to a small percentage of County landowners. This benefit was not enough to offset CRS program costs to County in terms of CRS enrollment requirements and long-term costs and staff resources associated with CRS administration (e.g., reporting, documentation) and implementation.

The Director of the Department of Community Development (DCD) is the appointed Coordinator for the NFIP. The Director assigns the primary administration responsibility to the Clallam County Building Official who is currently designated as the Clallam County NFIP Floodplain Administrator. Clallam County does not currently have a Certified Floodplain Manager.

Clallam County has adopted the NFIP Flood Insurance Study for Clallam County and related Flood Insurance Rate Maps (FIRM) maps for regulating development within floodway and 100-year floodplain boundaries. There are forty-six Flood Insurance Rate Maps (FIRMs) covering County riverine and coastal areas. These maps became effective at various dates from August 1980 to February 2001. The FIRM maps and related studies are available to the public at the Building and Planning Permit Counter. In addition, FIRM floodway and 100-year floodplain boundaries are available as digital layers within the Clallam County Geographical Information System (GIS). This information is easily accessed from the County's Web Based Interactive Maps. The County's on-line mapping resource can be used to query, display, and map floodplain areas together with other GIS layers such as property boundaries, landslide and erosion hazards, channel migration zones, wetlands, zoning, aerial photos, etc.

Clallam County is in good standing with NFIP, with no known outstanding compliance issues. The Washington State Department of Ecology performed NFIP, Community Assistance Visit (CAV) in 2005 with follow-up in 2006. Clallam County was notified by Ecology in August 2006 that all issues were satisfactorily addressed by the County and that compliance will be reported to FEMA. Since 2006, no CAV has been scheduled by Ecology or FEMA with Clallam County.

Clallam County building and critical area regulations addressing floodplain development meet or exceed NFIP requirements. Clallam County adopts the Appendix G, Flood-Resistant Construction of the International Building Code (IBC) by reference as part of its Building and Construction Code (Title 21 CCC). The adoption of the IBC, with Appendix G, complies with NFIP building and construction requirements.

The Clallam County Critical Areas Code (CAC) further regulates development in NFIP flood hazard areas (i.e., floodway and 100-year floodplain), including floodplain development such as subdivisions and land disturbing activities (e.g., land clearing, grading, filling, and excavation) not addressed by state and county building codes. County critical area protection standards also direct development away from flood hazard areas by requiring building setbacks and retention of buffers from the ordinary high water mark of marine and freshwater areas, channel migration zones, wetlands, steep slopes, and fish and wildlife habitat areas. Where such environmentally sensitive areas are located within or adjacent to NFIP floodway and 100-year floodplain areas this offers greater protection. For example, buffers from edge of a stream ravine or channel migration zone often extend beyond the edge of the floodway or 100-year floodplain resulting in greater flood hazard protection. These standards serve to further restrict and direct development away from flood hazard areas. As a

condition of approval for any permit to develop in flood hazard areas, Clallam County requires a notice to title be recorded on any property.

The Clallam County Subdivision Code (Title 29 CCC) determines how land will be divided into individual lots for future planned development. Consistent with state and federal regulations new subdivisions must demonstrate that they are designed to minimize flood damage. A key protection standard is that new subdivisions are prohibited within the 100-year floodplain unless each lot designated for development contains at least one building site, including access and utilities, that is not within such areas and is one acre or larger in size. The buildable area must be shown on the face of the final plat and site plans.

Clallam County requires developers to infiltrate and/or detain the increased stormwater caused by new development that can increase flood hazards. Development in and near environmentally sensitive areas such as streams, wetlands, steep slope areas, floodplains and channel migration zones is also subject to stormwater management quality controls to address erosion and sediment control during construction and also post-development stormwater runoff treatment. These controls address issues of sedimentation, which can fill in channels, wetlands, and floodplains, reducing their ability to carry or store floodwaters

County NFIP administration is a shared responsibility between building and planning staff involving site plan reviews and construction inspections. Elevation certificates are required as necessary to demonstrate NFIP compliance. Issuance of the building and critical area permits requires a determination of consistency with floodplain development standards addressed within County building, critical area, subdivision, and shorelines regulations. DCD has dedicated code compliance staff that addresses known or reported NFIP compliance issues and violations in coordination with building and planning staff. For County Public Works projects, County staff resources would also include survey and engineering design capabilities.

The Department retains all records related to issuance of building, land use, and environmental permits that authorize floodplain development. Records of permits issued are available in both paper and electronic formats. County permits authorizing floodplain development and related information (e.g., elevation certificates) are maintained, tracked and stored in a digital Permit Plan data base.

Clallam County planned actions to ensure continued compliance with the NFIP and to reduce flood plain risk as part of this hazard mitigation plan includes:

- 1) Continue to seek training opportunities for staff involved in floodplain development permit review, including training of key staff as Certified Floodplain Manager, as funding permits. In 2010, County staff received training related to: 1) floodplain management and endangered species act; and 2) tsunami preparedness and response efforts.

- 2) Continue to make maps on floodplains and associated channel migration zones, and wetlands available at the building and planning department permit counter and accessible on the Internet. The County will also continue to provide and update public outreach materials.
- 3) Seek more information and input on CRS participation during future Community Assistance Visits. Although not a current CRS community, the County continues to move forward with flood hazard mitigation efforts beyond minimum NFIP requirements. Examples of these efforts include recent adoption (2009) of the Dungeness River Comprehensive Flood Hazard Management Plan, channel migration zone mapping updates, removal of structures and infrastructure with floodway and meander zone areas at the mouth of the Dungeness River, and both restoration of County floodplain functions.
- 4) Update flood plain and channel migration zone maps. Clallam County has requested FEMA and the Washington State Department of Ecology to update County flood plain maps in areas where LIDAR topographic data is now available and where flood plain mapping has been shown to be deficient based on flood history. Clallam County has approved entering into an Interlocal Agreement with the Bureau of Reclamation for the Hoko River and also for the Clallam, Pysht and Elwha River as funding allows. Funding for work is from a National Estuary Program Grant.
- 5) Request a Community Assistance Visit to review the County's current program, assist with compliance with Biological Opinion, and obtain input on how to improve regulations, permit tracking, and public outreach.
- 6) Comply with the National Marine Fisheries Service (NMFS) Biological Opinion issued in September, 2008 related to the National Flood Insurance Program (administered by the Federal Emergency Management Agency) and the listing of several Pacific Northwest salmon species as threatened under the Endangered Species Act. The County received notification in August 2010 that it must demonstrate full compliance with the Biological Opinion by September 23, 2010. Mitigation requirements for compliance with the biological opinion are anticipated to have the added benefit of reducing flood risk.
- 7) Update the Clallam County Shoreline Master Program (SMP) consistent with state standards and guidelines. The County's SMP contains goals, policies and regulations for development along marine shorelines, lakes greater than 20 acres, streams greater than 20 cfs, and associated shorelands, wetlands and floodplains. Beginning in 2010, the County will initiate a 3-year planning process to update the SMP first adopted in 1975 consistent with Washington State Shoreline Management Act and related state shoreline management guidelines. This planning process will also look at integration strategies and coordination of the SMP update with this hazard mitigation plan as well as other overlapping plans and

regulations including but not limited to: NFIP, salmon recovery plans (including consistency with NMFS Biological Opinion on NFIP), growth management plans and regulations, and watershed plans. The SMP update must achieve no net loss of shoreline ecological functions. To address the NNL requirement, Clallam County will prepare restoration plans for marine and riverine shoreline areas subject to SMP.

- 8) Prepare a Comprehensive Stormwater Management Plan. Improving stormwater management, one of eight key objectives of the Puget Sound Partnership's 2020 Action Agenda, protects water quality, habitat, and water resources. Clallam County is in the process of developing a comprehensive stormwater management plan, facilitated by a grant from the Environmental Protection Agency. The Plan will be a guiding document to deal with stormwater issues identified in County land use, watershed, and salmon recovery plans and enable the County to approach stormwater in the future in an integrated manner. A consultant will facilitate the public process, bringing together stakeholders such as County, cities, tribes, state and federal entities, and citizens to produce a Comprehensive Stormwater Management Plan. The Plan includes establishing and updating comprehensive stormwater regulations for development, inventory stormwater sources, map and GIS stormwater sources, evaluate and assess stormwater quality and quantity, education and outreach, stormwater monitoring and assessment, integration of LID practices, funding capacity and evaluation, and an implementation schedule.
- 9) Implementation of adopted comprehensive flood hazard management plans.

While the county has well-defined objectives in regards to flooding and storm water management, the three cities within the county have varying degrees of plans and municipal code pertaining to potential flooding.

Since Forks lies in the wettest portion of the county with an annual rainfall averaging one hundred and forty-four inches, you would expect that their municipal code has a section on flood hazard management and it does. The City of Port Angeles has a draft storm water plan on their website and plans to have it adopted by 2011. The City of Sequim has virtually no municipal code on stormwater issues or flooding and they receive the least rainfall annually.

It is our intent to work with the cities during the next revision cycle helping them with NFIP strategies and offering information on how the county developed our strategies.

iii. LIKELIHOOD OF RECURRENCE

The probability of future occurrence of hazard events is "high" for flooding and "medium" for erosion from channel migration, as defined in Table II-2, Appendix C.

4. LANDSLIDE AND EROSION

i. DESCRIPTION OF HAZARD

Landslide and erosion are processes that involve the movement of material from gravity and weathering. Landslides are dependent on rock type, precipitation, seismic shaking, land development and zoning practices, soil composition, moisture, channel migration, flooding and slope steepness (Washington State, 2001 [HIVA]).

Landslide failures in Clallam County result from failures along planes in sedimentary bedrock, shoreline erosion, shallow landslides in soil deposits that overlie bedrock, and landslides and mass wasting in the upper watersheds and forest lands (such as at abandoned logging roads). Slope failure along the bedrock bedding planes is prevalent along the Strait of Juan de Fuca and Lake Crescent. These landslides may be triggered by earthquakes or undercutting the toe of the slope.

Landslides from shoreline erosion related to tidal action are ongoing, but may be exacerbated by drainage problems and removal of vegetation at the top of slopes associated with development along shoreline bluffs. The cause of landslides in Port Angeles may be associated with drainage and vegetation issues. Ravine erosion also is an issue in Port Angeles. Shallow landslides typically are triggered by large magnitude rainfall events, and subsequently become mudslides.

The landslides and erosion in upper watersheds and forest lands are causing recurring damage and disruption to important county roadways. Sedimentation from these areas is accumulating in the rivers and streams, causing flooding and habitat degradation. It is uncertain what the precise causes of mass wasting are; whether the roads form a conduit, the failures originate from side cast, or a combination of factors are involved.

Landslide hazard areas are mapped throughout Clallam County where steep slopes are present. Erosion hazards are even more extensively mapped through Clallam County. At least one-half of the shorelines in Clallam County are considered unstable marine bluffs (Washington State Department of Ecology, 1979).

The Elwha River dams have resulted in a substantial loss of sediment (approximately thirty-five percent reduction) provided to the natural maintenance of Ediz Hook, which forms the bay ward side of the Port Angeles Harbor. The dams also have reduced the stabilization of the marine cliffs near the Elwha River by approximately fifty-five percent. The dams are scheduled to be removed in 2011, a year sooner than expected due to the infusion of \$54 million in federal stimulus money. Olympic National Park will begin preparations for dam removal in 2010.

ii. HISTORY OF OCCURRENCES IN AREA

Previous damages relative to landslide and erosion events are included in Table II-3. The damages with the highest consequence, either related to the value to repair or by the impact on human activities, include slides that have closed U.S. Highway 101 and slides in Port Angeles one of which caused a fatality in 1998.

According to Rob Robertson, Director of Community Development and former building official, and fire marshal (personal communication, February 2004), most of the slope and bluff erosion issues in the last fifteen years have affected single-family residences. Bluff erosion and/or ravine erosion has damaged or threatens residences in developments located in Clallam Bay-Seki, Port Angeles, and in the county east of Port Angeles. In the past, some houses have been moved or removed; commonly, no mitigation action is taken. Drainage was rerouted to the base of the bluff at Diamond Point, where several houses at the base of a bluff were damaged or destroyed by a bluff failure in the late 1990s. Since the County's critical areas codes that affect new building require provisions for building setbacks and drainage (including roof drainage and septic issues), new structures have not been damaged. Mr. Robertson indicated that smaller, residential lots platted years ago near bluffs in Clallam County have had the most problems with bluff failure.

The Presidentially declared storm event of October 2003 also caused landslide and erosion hazards in Clallam County. Near the Makah Reservation in the northwest portion of the county, both lanes of Highway 112 closed after a sinkhole one hundred and fifty feet wide and forty feet deep washed out the highway (Seattle Times, October 21, 2003). A mudslide at Lake Crescent blocked Highway 101. The mudslide pushed a log truck into the lake; the driver escaped by swimming to shore (Seattle Times, October 18, 2003).



Milepost 38 – Highway 112

iii. LIKELIHOOD OF RECURRENCE

The probability of future occurrence of landslide and erosion hazard events is high, as defined in Table II-2, Appendix C.

5. SEVERE STORMS

i. DESCRIPTION OF HAZARD

Severe storms in Washington occur from November to March, generally when storms move from the ocean in a southwest to northeast direction. Clallam County is threatened annually by regional severe storms. The storms may include strong winds, tornadoes, rain, snow, or other precipitation, and often are accompanied by thunder or lightning (Clallam County HIVA, 2004). Severe storms also may trigger landslides, erosion, flooding of river shorelines and coastlines, and channel migration. Areas that are particularly vulnerable to severe storms in Clallam County include the coastline and the Lake Crescent area.

ii. HISTORY OF OCCURRENCES IN AREA

Previous damages relative to severe storm events are included in Table II-3. The damages with the highest consequence either related to the value of repair or by the impact on human activities, include the 1995 wind storm and the wind storms of 2006 and 2007.

Most recently, the Presidential declared storms of December 2008 and January 2009 caused flooding and near-record snowfall. The combination of snow followed by warming and more rain caused flooding due to water backing up from the snowpack.

iii. LIKELIHOOD OF RECURRENCE

The probability of future occurrence of severe storm hazard events is high, as defined in Table II-2, Appendix C.

6. TSUNAMI (see also pp. 16-17 in seismic hazard section)

i. DESCRIPTION OF HAZARD

A tsunami is a series of waves most commonly caused by an earthquake beneath the sea floor. If a large earthquake displaces the sea floor near the Washington coast, the first waves may reach the outer coast minutes after the ground stops shaking. There would be no time for authorities to issue a warning. This tsunami would reach the Pacific coast in about thirty minutes and cities along the Strait of Juan de Fuca between one and two hours later. This type of event occurring along the coast is referred to as a “near tsunami” as opposed to a “far tsunami” generated far to the west in the ocean.

Following an earthquake far out in the Pacific Ocean it may take hours for tsunami waves to reach the Washington coast. The Coast and Alaska Tsunami Warning Center alerts local officials who may order evacuation, but isolated areas may not receive official announcements. Washington State EMD is building a network of AHAB (all hazards alert broadcast) sirens along the Pacific coast and the Strait of Juan de Fuca in an effort to warn citizens recreating in vulnerable areas. As of September, 2010 Washington State has forty-five active sirens with a total of ten sirens planned for installation Clallam County.

ii. HISTORY OF OCCURRENCES IN AREA

Tsunamis from locations across the Pacific Ocean basin and from the Cascadia Subduction Zone off the Washington coast have hit coastal communities in the 900 – 930 era, 1700, the 1890's, 1944-1953 era, 1949, 1960, 1964 and 1980.

iii. LIKELIHOOD OF RECURRENCE

Great earthquakes in the Pacific Ocean basin generating tsunamis that impact Washington's outer coast and the Strait of Juan de Fuca occur at a rate of about every six every one hundred years. In the Cascadia Subduction Zone, there is a ten to fourteen percent chance of a magnitude 9.0 earthquake and tsunami in the next fifty years so the likelihood of recurrence would be "low" as defined in Table II-2, Appendix C. A rate of occurrence for local earthquakes and landslides that generate tsunamis has not been determined.

7. WILDLAND / URBAN FIRE

i. DESCRIPTION OF HAZARD

Wildland fires destroy forests, brush, field crops and grasslands, and may be caused by nature or humans. The wildland fire season extends from mid-May through October. The largest fires occur after three or four summers of extended dry weather, even when the intervening winters are wet. Most of the fires occur on the ridges or in the valley bottoms. Due to increasingly dry condition, Clallam County has put a burn ban in place for the last four summers during fire season. Twice in 2009 the county has been under a "red flag warning" and even recreational fires are banned during that time.

Wildland fire protection is provided by federal, state, county, city and private fire protection agencies and private timber companies. Factors affecting the risk of wildland fires include rainfall, type of vegetation, number of snags, amount of old growth timber and proximity to firefighting agencies. Fire damage to watersheds may increase the vulnerability to flooding (Clallam County HIVA, 2004).

The City of Forks is vulnerable to fires because of its location near multiple east-west river valleys and the fact that it is surrounded by commercial forest lands. Large fires are likely to start in the east and burn down the valley, toward Forks. Since the 1990s, many forest service roads have been reclaimed or are out of use. The system of roads available from the 1950s to 1980s for fighting wildland fires has diminished considerably since the 1990s. Additionally, in the event of a large fire, local fire crews are no longer available as they are sent to fight other wildland fires throughout the western states during fire season. Fire crews likely would be mobilized from outside the county (or even the state), resulting in a delay in fighting large fires.

Due to new research conducted by Peninsula College and published in May, 2009, we've learned that the eastern portion of the county, where Sequim is located, is ranked fifth in fire risk in all the western states. This report is listed on the reference page at the end of this document and is available online.

ii. HISTORY OF OCCURRENCES IN AREA

Previous wildland fires that have affected Clallam County include large fires in 1951 in the Forks area, 1955 in the West Twin River area and 2002 in the Clallam Bay area. Damage claims were not available. The 1951 Burn began near Lake Crescent and burned into and around Forks. Approximately 30 buildings and 33,000 to 38,000 acres of timber were lost. The 1955 fire burned approximately 5000 acres of timber. The 2002 fire started as slash burnings on private land.

Urban fires include those ignited at the wildland/urban interface and fires ignited within urban areas. About 40 percent of Clallam County's population lives within urban areas; the remainder lives outside the urban areas. Forks is surrounded by commercial forests and is particularly susceptible to wildland/urban interface fires. Many of the older structures in the County, such as in Port Angeles, may be vulnerable to urban fires because of their construction prior to current fire codes and fire resistive materials, including electrical wiring. The Port Angeles Fire Department indicated many of the fire damages represent commercial structures, with a large portion in any year representing a single large fire. As recently as December 2003, the City of Port Angeles experienced a significant fire at the Elks Naval lodge, one of the City's largest structures located in the downtown core.

iii. LIKELIHOOD OF RECURRENCE

The probability of future occurrence of wildland fire hazard events and of urban fire hazard events is moderate, as defined in Table II-2, Appendix C.

7. VOLCANO

i. DESCRIPTION OF HAZARD

A volcano is a vent in the earth's crust through which magma, rock fragments, gases, and ash are ejected from the earth's interior. Over time, accumulation of these erupted products on the earth's surface creates a volcanic mountain. Washington State has five major volcanoes in the Cascade Range – Mount Baker, Glacier Peak, Mount Rainier, Mount St. Helens and Mount Adams.

ii. HISTORY OF OCCURRENCES IN AREA

Volcanoes can lie dormant for centuries between eruptions, and the risk posed by volcanic activity is not always apparent. When Cascades volcanoes do erupt, high speed avalanches of hot ash and rock called pyroclastic flows, lava flows, and landslides can devastate areas ten or more miles away, while huge mudflows of volcanic ash and debris called lahars can inundate valleys more than fifty miles downstream. Falling ash from explosive eruptions can disrupt human activities hundreds of miles downwind, and drifting clouds of fine ash can cause severe damage to the engines of jet aircraft hundreds or thousands of miles away.

iii. LIKELIHOOD OF RECURRENCE

Washington's volcanoes will erupt again, as shown by activity at Mount St. Helens, which began another eruptive phase in the fall of 2004. Because people are moving into areas near these mountains at a rapid pace, the state's volcanoes are among the most dangerous in the United States. Mount Baker in Whatcom County erupted in the mid-1800s for the first time in several thousand years. Activity at steam vents in Sherman Crater, near the volcano's summit, increased in 1975 and is still vigorous, but there is no evidence that an eruption is imminent.

Glacier Peak in Snohomish County has erupted at least six times in the past four thousand years. An especially powerful series of eruptions about thirteen thousand years ago deposited volcanic ash at least as far away as Wyoming.

Mount Rainier in Pierce County is one of the most hazardous volcanoes in the United States. It has produced at least four eruptions and numerous lahars in the past four thousand years. It is capped by more glacier ice than the rest of the Cascades volcanoes combined, and Rainier's steep slopes are under constant attack from hot, acidic volcanic gases and water. These factors make this volcano especially prone to landslides and lahars. More than one hundred fifty thousand live on former lahars in river valleys below the volcano.

Mount St. Helens in Skamania County is the most frequently active volcano in the Cascades. During the past four thousand years, it has produced many lahars and a wide variety of eruptive activity, from relatively quiet outflows of lava to explosive eruptions much larger than that of May 18, 1980. Its current eruption began in September 2004.

Mount Adams in Yakima County has produced few eruptions during the past several thousand years. This volcano's most recent activity was a series of small eruptions about a thousand years ago followed by a debris avalanche and lahars that inundated part of the Trout Lake lowland less than five hundred years ago.

Additionally, Oregon's Mount Hood, about fifty miles southeast of Portland, poses some threat to areas of Southwest Washington along the Columbia River. Mount Hood has erupted repeatedly for thousands of years, most recently during two episodes in the past fifteen hundred years; the last eruption ended shortly before the arrival of Lewis and Clark in 1805. Mount Hood, and other volcanoes in British Columbia, Oregon, and California, can produce tephra which would fall on and affect Washington. Tephra is the rock fragments that are expelled from a volcano when it erupts and can range in size from powdered ash to very large fragments ranging in weight up to thirty tons. The April 2005 USGS Open File Report 2005-1164 states four volcanoes in Washington, Baker, Glacier Peak, Rainier and St. Helens and four in Oregon, Crater Lake, Hood, Newberry and South Sister are all in the "very high risk" category. The methods used to score the volcanoes are not a predictor of future behavior or reliable indicator of which is most likely to erupt next. Rather the scoring methods consider past activity and potential for explosion, proximity to population centers, air traffic corridors and availability of volcano monitoring resources and instrumentation capabilities. For this reason, the probability of future occurrence is ranked "low" as defined in Table II-2, Appendix C.

D. VULNERABILITY ASSESSMENT

1. IDENTIFICATION OF ASSETS

The Steering Committee determined during their meetings that the methodology to establish vulnerability would focus on facilities that would result in high consequence if loss occurred during a hazard event. "High" consequence was defined in terms of potential for life loss and severe diminishment of emergency services and services to all portions of the county. The vulnerability assessment consisted of three components:

1. Composite hazard assessment;
2. Identification of critical facilities, including facilities of high consequence loss; and
3. Correlation of critical facilities with composite of key hazards

Many locations in the County are vulnerable to multiple hazards, which heighten the probability that assets in the area will be affected by a hazard-based event. Critical infrastructure is listed in Appendix E and then detailed on the supplied maps in the same appendix.

The severity of the hazards effects, and even the underlying causes, are influenced by the underlying geology. For example, soft alluvium, which is heavily saturated, tends to amplify ground motion during an earthquake. The geology also influences mitigation strategies, such as the feasibility of roadway realignment in areas of steeply dipping pre-Quaternary bedrock.

According to FEMA (2002), a critical facility is defined as “a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important safety, emergency response and/or disaster recovery functions.” Using the FEMA definition as a baseline, each partner with ownership of properties identified critical facilities within their jurisdiction. All partners participating in this plan had such facilities. The facilities included in the categories of fire station, medical, civil (such as the Port Administration Building), radio tower, bridges, airport, important maintenance facilities, marinas or marine terminals, schools (or particular school buildings), and utilities, including wastewater, water and electrical facilities were identified with respect at least two attributes for GIS mapping: type and location. The critical facilities, approximately 360, are shown on the Critical Facilities maps in Appendix E.

In 2003, GeoEngineers conducted the vulnerability assessment of the critical facilities by correlating the critical facilities locations with “hot spots” for hazards. A “hot spot” is where two or more hazard layers overlap. The assessment was completed using the County and Port Angeles GIS databases of facilities and by plotting individual facilities that are not on the GIS databases. For the purpose of defining hazard “hot spots”, certain layers were combined, with the following resulting hazards:

- Drought
- Earthquake/ seismic related
- Flood and Riverine hazards (floodway, 100-year floodplain/channel migration zone)
- Landslide
- Severe Storm
- Tsunami
- Volcano
- Wildland / urban fire (see reference page for Peninsula College study)

Severe storm hazard and volcano areas were not included because they do not have GIS layers for location of hazard areas.

2. POTENTIAL IMPACT OF HAZARDS

Although “hot spots” are intended to represent the areas with the highest probability of experiencing a hazard event, other areas could be vulnerable to a high magnitude earthquake, severe storm or fire. Therefore, the second part of the vulnerability assessment involved plotting additional critical facilities that the partners decided would be a “high consequence loss” in the event of a disaster, even if the critical facility is not located in a defined “hot spot”. High consequence losses include Olympic Medical Center in Port Angeles, the McDonald Creek Bridge between Port Angeles and Sequim, and the 8th Street bridges in Port Angeles. Table II-4 provides the critical facility names, type of facility and the number of hazard areas that the facility falls within.

To identify the specific critical facilities vulnerable to a certain hazard type, refer to the hazard columns in Table II-4. In general, the potential for impact of each hazard on assets, rated as low, moderate or high, is summarized in Table II-2. This rating is based on the potential number of people affected and potential damage in dollars. Seismic-related hazards are considered to have the highest potential impact to affect assets in Clallam County. Landslides are considered to have the highest probability of occurrences and the highest frequency of impact to assets.

PART III - MULTI-JURISDICTIONAL RISK ANALYSIS

A. COUNTY-WIDE CONCERNS

1. TRANSPORTATION

All partners of this Plan identified reliable access across the County during and after key hazard events as a concern. Access within the County may be restricted as a result of floods, landslides and washouts, evident during the recent October 2003 Presidential declared storm and in more recent Presidential declarations in December, 2008 and January, 2009. This may be a particular concern for emergency responders. In large disasters or severe storms, Clallam County will be completely isolated from the remainder of the state. Bogachiel River flooding in the west can isolate Forks and the West County from Jefferson County. Closure of the Hood Canal Bridge on U.S. Highway 101 to the east of the County can isolate the northern Olympic Peninsula from the state west of Puget Sound. If both highway access routes are closed (East and West County), Clallam County becomes an island relative to receiving new supplies, except for air traffic and barging. All U.S. Highway 101 and state bridges in Clallam County have been named critical facilities by Steering Committee members and WSDOT (Don Clodfelter, personal communication, October 2003). The Airports and seaports also may be vulnerable to damage during certain disasters.

The County relies on WSDOT for maintenance and repair of U.S. Highway 101 and the state routes that traverse the County. WSDOT funds for Clallam County roads historically have been relatively low because of the low population density of the County. The County, cities and private parties maintain other routes in the study area. U.S. Forest Service and National Parks roads also may provide alternate access during disasters. Not all federal and state highway segments have alternate routes.

Landslides and/or washouts in the northwest portion of the County and the area around Lake Crescent are geologically controlled and difficult to mitigate along entire routes. Flooding of roads and flood related damage to bridges in the West County, especially in the Forks and LaPush areas, is repetitive and difficult to manage because of the high density of rivers and streams in the area.

2. UTILITIES AND COMMUNICATION

Another major concern of the partners is to maintain the reliability of utilities and communications during and after a disaster event. For the reasons cited earlier the County, or portions of it, can be essentially isolated during disaster events. Citizens and emergency responders need reliable utilities and communications systems, or have backup systems in place, during a disaster event. The County received a \$5,765,100 grant from the U.S. Department of Homeland Security (DHS) in October 2003 to fund Phase I of the Olympic Peninsula Safety Communications Alliance Network (OPS-

CAN) Project. This project will increase the interoperability between emergency responders. Over forty local, state, tribal and federal partners will collaborate on communication (DHS Press Release, October 7, 2003). This grant should lead to more reliable communication during disaster events.

B. LOCAL CONCERNS

Each of the partners provided key planning or facilities documents to Emergency Management for review with regard to sections that apply to the key hazards defined in this Plan. In particular, the applicable sections were reviewed for reference to (1) key goals identified by the Steering Committee and (2) mitigation measures that may be proposed to protect key assets from the hazards. Key assets include public infrastructure, as well as private facilities (such as residential uses), that are at risk from repetitive loss and/or high consequence events.

C. INDIVIDUAL PARTNER CONCERNS

The eight key hazards identified for this plan (drought, riverine and coastal processes, earthquake / seismic-related, landslide and erosion, severe storms, tsunamis wildland / urban fires, and volcano) may not affect each partner of this Plan to the same degree. The rationale for potential additional mitigation measures that may be necessary for some of the partners is discussed further.

1. CLALLAM COUNTY

At least half of the County is susceptible to bluff failure along the shoreline. The Clallam Bay-Seki and Dungeness River areas of the County are not incorporated, but have higher population densities than other unincorporated areas of the County, and are located in areas susceptible to flooding, tsunamis, landslide/erosion and severe storms. Critical facilities are located in these areas including bridges, a prison and sheriff's offices in Clallam Bay-Seki, and water reservoir and fire station in the Dungeness River area.

2. CITY OF FORKS (AND WEST COUNTY)

The City of Forks and western portion of the county have high vulnerability to three of the eight hazards we consider in this plan. The west and northwest portions of the county are susceptible to being cut off from the eastern portion of the county due to floods, landslides and severe storms that occur almost yearly. This risks impact U.S. Highway 101 and SRs 110, 112 and 113 which are the only routes into this area by flooding, landslides and extended power outages.

City of Forks - Hazard Vulnerabilities Risk Assessment

Hazards	H	M	L
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Drought			x
Landslides/erosion	x		
Flooding	x		
Earthquake			x
Severe storms	x		
Tsunami			x
Volcano			x
Urban/wildland fire			x

3. CITY OF PORT ANGELES

Port Angeles is highly vulnerable to five of the eight hazards and would be devastated by the occurrence of a local earthquake and/or tsunami. There is a newly discovered fault running through the city capable of producing a 7.0 magnitude earthquake according to Tim Walsh, Chief Geologist for WA State Department of Natural Resources. Port Angeles' other specific issues include (1) steep slopes with landslide (including bluff failure) hazard, (2) construction of a portion of the City on fill that could be liquefiable or settle differentially in an earthquake, combined with old construction of most buildings not built to current seismic standards; and (3) the potential for urban fires, particularly in areas with many older buildings. Several critical facilities are located along the waterfront including docks, the ferry terminal, a large medical facility, and the transit terminal. The waterfront is a "hot spot" for because of these multiple hazards and the fact that a significant number of large fuel tanks containing diesel, fuel oil, and propane line the waterfront. Additionally, the cross-county transportation thoroughfare (U.S. Highway 101) by-pass runs right through this area and could be easily blocked by any number of hazards.

City of Port Angeles - Hazard Vulnerabilities Risk Assessment

Hazards	H	M	L
Drought			x
Landslides/erosion	x		
Flooding		x	
Earthquake			x
Severe storms		x	
Tsunami		x	
Volcano			x
Urban/wildland fire		x	

4. CITY OF SEQUIM

The City of Sequim lies in the eastern portion of the county in a much drier area with large tracks of agricultural land. The Dungeness River is in this area but would not threaten the city itself with flooding. Because of the dryness, narrow roads and lack of water outside the city limits, this area is at high risk for urban/wildland fire.

City of Sequim - Hazard Vulnerabilities Risk Assessment

Hazards	H	M	L
Drought	x		
Landslides/erosion		x	
Flooding			x
Earthquake			x
Severe storms		x	
Tsunami			x
Volcano			x
Urban/wildland fire	x		

5. PORT OF PORT ANGELES

The Port and other airport operators (e.g., the City of Forks) are key for transportation. When cross-county access is closed because of flooding and landslides, or in a regional disaster (such as when the Hood Canal Bridge closes), portions of the County rely on air traffic or barging for supplies. The Port levies \$.15204 per thousand yearly on all property in the county.

6. SPECIAL PURPOSE DISTRICTS & PRIVATE FACILITIES

Olympic Medical Center, Peninsula College and the Clallam County Public Utility District are all special purpose districts and thus rely on county or local emergency services and utilities.

In 2008, the voters approved a levy increase for OMC in Hospital District #2 of \$.33 for a total of \$.44020 per thousand. As part of this funding increase, they added a full-time emergency manager position to the hospital staff.

Peninsula College was completed in 1965 so the majority of campus facilities built during the original construction of the campus require system upgrades, remodeling or replacement. These upgrades are described in the projects list for Peninsula College.

PART IV - MITIGATION STRATEGIES

A. GOALS AND OBJECTIVES

1. DEVELOPMENT OF GOALS AND OBJECTIVES

The goal of our community is primarily to protect lives, preserve property, protect the environment and restore the economy after a disaster. Discussion in the Steering Committee centered on these goals and the following objectives were identified as desirable objectives after our primary goals were reached and the community was stabilized.

- Maintain transportation routes across the County, during and after key hazard events.
- Maintain the reliability of utilities or have emergency utility plans in place during and after key hazard events.
- Maintain emergency services capability during a key hazard event, by providing redundancy in key communications systems by use of OPSCAN, ARES volunteers, training volunteers in CERT and Map Your Neighborhood classes raising their skills and awareness to stabilize their neighborhoods until emergency services arrive, and encouraging citizens to prepare to be self-sufficient for several weeks in the event of a disaster.
- Minimize damage and reduce repetitive losses to property from key hazards such as flooding, landslide and seismic-related by raising or relocating homes prone to repetitive flood damage, planting appropriate vegetation to potential landslide slopes and retrofitting critical facilities to present seismic standards.
- Reduce vulnerability to fires by increasing public awareness of “defensible space” surrounding their property, the use of fire-resistant landscaping and continued use of the annual burn ban during fire season to limit unintended fires starting.

2. METHODOLOGY TO IDENTIFY MITIGATION MEASURES

The first step in development of priorities for the mitigation measures was to review current local regulations and/or hazards-related plan in relation to the goals for the Hazard Mitigation Plan stated above. The review focused on key hazards for which disaster assistance has been received.

At the kick-off meeting, the partners met to review all of the previous projects identified in the 2004 plan and decide what additional projects their agency might include in the plan update. Discussion centered on the known risks of fragile infrastructure, limited resources as common problems to all partners. A greater recognition of the need for an organized plan for addressing these common

problems has culminated in a greater participation of the original partners and the addition of new partners. All partners agreed to meet on a regular basis during the next five years, perhaps quarterly to review their projects and submit new ones and to their commitment to engage more partners that could readily benefit from participation in the Hazard Mitigation Planning process. An additional commitment by Clallam County's Department of Community Development to rigorously coordinate planning document revisions with the Hazard Mitigation Plan enhances all planning efforts by presenting a focused, well-coordinated effort that compliments and enhances both processes. These strategies constitute the detailed blueprint for more specific projects.

The county and partners identified seventy-six new mitigation measures (projects), which have been organized by partner. Ten are for additional studies to gather information, inventory condition of critical facilities, and inventory public utilities systems. Nine projects are for electrical infrastructure upgrades, five are for building or retrofit projects, five are for water and reservoir protection, five are to replacing aging culverts to prevent flooding, three are for shoreline preservation, and the remaining ones are for a sewer upgrade, road improvement and public education.

In the first Hazard Mitigation Plan accepted in 2004, the greatest number of projects was "soft" projects consisting of policies, studies, guidelines and assessments. In the intervening years, a great deal of progress has been made by the partners in laying the policy groundwork for forward motion with the result being that three quarters of the new projects are for projects that will mitigate future damage from disasters.

3. PRIORITIZATION METHODOLOGY

Based on review by each partner, desired projects were ranked by priority of high, medium or low. Only high- and medium-rated projects are included in this Plan. "Low ranked" projects were defined as those projects that are worthwhile and would be nice to include but are unlikely to be funded in a severely depressed economy when only the most pressing needs are being considered. High priority project designation is based on anticipated high impact on reducing vulnerability through exposure to the hazard and/or facilitating response. Medium rated projects were defined by the Steering Committee as yielding a lower rate of reduced vulnerability than the higher-rated projects.

Each of the partners has evaluated their projects according to criteria in Table III-1. The result of the application of this table is found under each project under priority rating.

Table III-1. Criteria Used to Prioritize Projects

Prioritization Criteria	Prioritization Rating		
	Low	Medium	High
Effectiveness	Does not solve problem effectively	Is moderately effective in solving problem	Is very effective in solving problem
Time to Implement	Many years	Several years	Three or fewer years
Permanence	Temporary	Short life span	Relatively permanent
Cost ¹	Very expensive	Moderately Expensive	Inexpensive
Technical Feasibility	Difficult to implement	Moderately able to implement	Easily implemented
Social/Political Feasibility	Unpopular/Affects few	Able to implement with political cost	Popular implementation /effects many
Environmental Impact	Significant Impact	Medium	Low/Positive Impact

Note: ¹ As determined by FEMA-approved cost-benefit analysis.

B. MITIGATION STRATEGIES

The following selected projects are presented on page 39 forward with priority rating and department responsibility for implementation and administrative oversight, relative timing and potential funding sources. A variety of funding sources will be utilized. These include:

- Bureau of Indian Affairs (BIA)
- Capital Funding Project (CFP)
- County capital projects funds
- County Parks Capital Improvements Program (for acquisition of sites along the shoreline)
- County Road Advisory Board (CRAB)
- E911 capital reserve
- Economic Development Administration (EDA)
- Federal Aviation Administrator (FAA)
- Federal Highway Administration (FHWA)
- Federal stimulus money
- FEMA's 1362 repetitive loss program
- Flood Mitigation Assistance Program
- Flood Control Assistance Account Program (FCAAP)
- Hazard Mitigation Grants Program (HMGP)
- HUD Indian Community Development Block Grant (ICDBG) Program
- Insurance funds
- National Park Service
- Public Works Trust Fund
- Real Estate Excise Tax (REET)
- Salmon Recovery Funding Board (SRFB)
- U.S. Army Corps of Engineers
- U.S. Department of Housing and Urban Development (HUD) Community Development
- U.S. Forest Service (USFS)
- Block Grant (CDBG) Program
- WA State Department of Ecology (DOE)
- WA State Department of Fish and Wildlife (WDFW)
- WA State Department of Natural Resources (DNR)
- WA State Department of Transportation (WSDOT)

The project listings follow:

1. CITY OF FORKS

NEW PROJECTS

Project # 1

Russell Road Culvert Replacement

Replace dual side-by-side 48" diameter CMP culverts with a single concrete box culvert where Mill Creek crosses under Russell Road just north of the Forks Airport. Estimated cost of \$400,000. Culverts were damaged in the storms of 2008; however, FEMA determined that damage was due to the beginning of a structural failure of the culverts, rather than storm damage. Less than \$10,000 was received from FEMA to address some mitigation of potential hazards at this location.

Priority Rating: Extremely High
Responsibility: City of Forks, Public Works Department
Timing: 2009-2010
Potential Funding: Possible federal transportation dollars, City of Forks street fund
Hazard Mitigated: Washout of culverts, roadway, and water mainline on the SW portion of the City. Roadway is the designated alternative to SR 101, used by numerous homeowners and commercial enterprises in that portion of the City. Road closure would create additional traffic through the center of Forks via Bogachiel Way and SR 101.

Project # 2

City of Forks Culvert Assessment Study/Report

Undertake an assessment of the condition of all culverts used to convey stormwater away from the Forks Urban Growth area to determine if they are at risk to (1) similar failure as experienced at the Russell Road/Mill Creek site; (2) potential high water flood events; and, (3) rain on snow events. Survey would include a visual assessment of outer, and where possible inner, portions of existing stormwater culverts. Information obtained from assessment would be put into a narrative report explaining potential risks to each culvert. In addition, information would be collected on the culvert location, type, and condition that could be put into the City's GIS to help identify potential locations of "domino effect" events – one culvert fails and causes another to be damaged further downstream. Cost: \$15,000

Priority Rating: Medium
Responsibility: City of Forks Public Works and Planning Departments
Timing: 2010-2011 – contingent upon funding/staffing available
Potential Funding: Grant funding, possible City street department funding

1. City of Forks - continued

Hazard Mitigated: Potential hazards to existing stormwater conveyance systems, usually in place with roads and utility crossings, would be identified and prioritized as to where additional work will be required.

Project # 3

Storm-related roof damage mitigation assessment

Utilizing a windshield survey approach, the City working with local affordable housing entities would conduct a windshield-based assessments of roofing conditions within the Forks Urban Growth Area to determine if there exists a need for a roof replacement program. In the past, the City has received funding in the form of a Community Development Block Grant to help low income property owners, and landlords renting to low income tenants, repair residential dwellings. A similar windshield assessment of the housing stock was utilized to pursue such funding. Here this assessment could be utilized to pursue similar funding focused on roof repair and replacement thereby reducing the potential storm related loss and damage to residents in the Forks Urban Growth Area. Cost: \$15,000

Priority Rating: Medium
Responsibility: Planning Department
Timing: 2010-2011 –contingent upon funding/staffing availability
Potential Funding: FEMA Hazard Mitigation Funding; CDBG Program Income Funding if any; Energy conservation dollars where applicable; possible City current expense funding, in-kind contributions of staff time by City and possible partners.
Hazard Mitigated: Identify potential dwellings that could experience damage in storm related events. Utilizing the general data to pursue funding programs to develop revolving loan, and/or deferred loan, programs to address identified need.

Project #4 – was Project #5 in 2004 plan – revised 2010

Palmer Road Stormwater Detention Pond and Conveyance System

To reduce flooding in and about Merchant Road at the end of Palmer Road, construct a detention pond at the end of Palmer Road in the vicinity of Calawah Road. Stormwater would be conveyed from the Palmer/Calawah intersection, through the new Palmer Road system, to the Calawah River.

Current Status/Outcome:

Property was purchased by the City for this purpose. Preliminary design work was undertaken by the County Road division. Funding for project development has been lacking.

1. City of Forks - continued

Priority Rating:	Medium. When the road closes there is no other egress; approximately 10 to 20 homes and home sites are impacted.
Responsibility:	City of Forks Utilities Department
Timing:	1 to 3 years
Potential Funding:	City of Forks, Clallam County Public Works Dept, FCAAP (DOE) funding for portions not associated with retaining/detention pond.
Hazard Mitigated:	Riverine processes.

Project #5 - 2010

Adopt the Hazard Mitigation Plan by the City of Forks.

Priority Rating:	High
Responsibility:	City of Forks Planning Department, adopted administratively
Timing:	1 year
Potential Funding:	N/A
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards. & & &

PROJECTS FROM 2004 PLAN

Project #1 – 2004

Adopt the Hazard Mitigation Plan by the City of Forks.

Outcome:

City adopted the HMP via Resolution No. 319 in April 2004. When the Comp Plan elements were updated, the HMP was not integrated as there was not a real format to do so.

Priority Rating:	High
Responsibility:	City of Forks Planning Department; adopted administratively
Timing:	1 year
Potential Funding:	N/A
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards.

Project #2 – 2004

Develop a transportation element of the City Comprehensive Plan to address access.

Outcome:

No further information to report.

1. City of Forks - continued

Priority Rating: High
Responsibility: City of Forks Planning Department with Emergency Manager
Timing: 1 to 3 years
Potential Funding: City operating budget
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #3 – 2004

Update subdivision codes for wildfire protection, including setback standards or driveway widths and turnarounds for emergency vehicle access.

Outcome:

This has been implemented in practice with the SEPA process for those lands divisions requiring SEPA. In addition, short plats utilizing private drives have required the concurrence from the local fire district's marshal regarding their design and layout. This has been done on an "as applicable basis" due to the fact that set standards have at times proven difficult to implement in certain situations. As a result, the reliance upon the fire district's expertise has proven to be more effective.

Priority Rating: High
Responsibility: City of Forks Planning Department
Timing: 2 to 3 years
Potential Funding: Cooperative with the County
Hazard Mitigated: Urban/wildland fire.

Project #4 – 2004

Thin and clear understory in the area of Forks.

Current Status / Outcome:

There is still a need for such activities. Recent state budget cuts have eliminated significant portions of the pre-commercial thinning operations on state lands.

Priority Rating: High. The City of Forks is susceptible to wildland/urban fires.
Responsibility: City of Forks Planning Department
Timing: 1 to 3 years
Potential Funding: Grants from U.S. Forest Service National Plan
Hazard Mitigated: Urban/wildland fire.

1. City of Forks - continued

Project #6 - 2004

Conduct seismic analysis of airport runways for features that could fail in an earthquake so that repairs can be made before accidents occur.

Outcome:

WSDOT-A undertakes a review of the airport runways. The last was done prior to the adoption of the HMP. However, when the next FAA/WSDOT sponsored runway assessment that would include structural occurs, the City would be requesting this element be considered.

Priority Rating:	Medium
Responsibility:	City of Forks Street Department
Timing:	3 to 5 years
Potential Funding:	FAA, WSDOT
Hazard Mitigated:	Seismic-related.

Project #5 - 2004

To reduce flooding in and about Merchant Road at the end of Palmer Road, construct a detention pond at the end of Palmer Road in the vicinity of Calawah Road.

Stormwater would be conveyed from the Palmer/Calawah intersection, through the new Palmer Road system, to the Calawah River.

Current Status/Outcome:

This has been revised to become **Project #4 – 2010**. See page 40 for complete detail.

End of updates for City of Forks

2. CITY OF PORT ANGELES

NEW PROJECTS

Project #1 - 2010

Upgrade transformer at A-Street Substation to provide backup to Valley Substation (Map #1)

Valley Substation is the largest in the Port Angeles distribution system. It is located below the bluffs near the waterfront. It supplies the downtown and waterfront areas. Because of numerous inter-ties between different distribution feeders, any one of the City's substations may normally be de-energized by reconnecting loads to feeders from other substations. However, there is not always sufficient spare feeder capacity to do this during high load conditions in cold weather. A-Street substation is physically close to Valley Substation and could potentially carry three of the six Valley feeders through existing interconnections. The limitation is that A-Street Substation also has the smallest transformer in the system. That prevents it from assuming much Valley load under most conditions. This proposal would replace the existing 7.5 MVA Transformer at A-Street with a 20 MVA transformer. That would allow all of Valley's loads to be carried by other substations under any conditions if Valley Substation was seriously damaged. Estimated cost: \$860,000.

Priority Rating:	High
Responsibility:	Public Works Electrical Utility
Timing:	1-5 Years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	The extra capacity would allow these substations to "take over" for the Valley Street substation in case of failure due to Tsunami, major flooding, fire or other disaster.

Project #2 - 2010

Install second electric utility supply to Olympic Medical Center (OMC.)

A single feeder from the Washington substation via the Washington 1202 line currently supplies OMC. The only backup power supply is the hospital's own generator. This proposal would provide a second utility power source from another substation via Jones Street, and an automatic transfer switch. (See Map #2) Note: During the Eastern hospital expansion, infrastructure was installed for this eventual upgrade.

Estimated Cost: \$200,000.

2. City of Port Angeles - continued

Priority Rating:	High
Responsibility:	Public Works Electric Utility
Timing:	1-5 years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	Currently, a single feeder feeds OMC. In case of emergency, power would remain as long as their generators would run. Adding another utility feeder would build redundancy into system and provide a more reliable power supply to the area's only hospital.

Project #3 - 2010

Install second electric utility supply to Fairchild Airport Terminal

Fairchild Airport is the alternate command post for the U.S. Coastguard station in the event of a tsunami or severe storm damage on Ediz Hook. On-site emergency generators for the airfield lighting and the terminal provide the only backup power currently at the airport. The single utility supply is an overhead line routed adjacent to tall trees that have historically caused frequent outages. This proposal would install approximately 3,500 feet of underground feeder to provide a second utility supply that would bypass the most trouble-prone sections of overhead line and provide the preferred supply to the airport. This project has the added benefit of increasing service reliability to the City Light Operations facility located on airport property. In an emergency situation, Light Operations will be the command center for restoration of power throughout the City.

Priority Rating:	Medium
Responsibility:	Public Works Utility
Timing:	1-5 years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	In case of disaster, the USCG would relocate to the airport. Currently, it is served by a single feeder. Adding feeder would build redundancy into system.

Project #4 - 2010

Underground Power to Ediz Hook and USCG

Power is currently underground from the Police Department repeater to the USCG base. This proposal would change current, overhead power between Nippon and the repeater to underground (See Maps 3a, 3b, and 3c).

2. City of Port Angeles - continued

Priority Rating: High
Responsibility: Public Works Utility
Timing: 1-5 years
Potential Funding: FEMA, CFP
Hazard Mitigated: Underground power would be less likely to be interrupted during a winter storm, tsunami, etc., which could force relocation of USCG

Project #5 - 2010

Protect/reinforce sole source water main from Elwha River against slide failure.

Specifically, the slide area on Kaycee Way, West of Lower Elwha Rd. needs to be reinforced.
That area has suffered slides in the past.

Priority Rating: High
Responsibility: Public Works
Timing: 1-3
Potential Funding: FEMA, CFP
Hazard Mitigated: Currently, the city is served by a single source water line from the Elwha River. In the event of a disruption, the city would quickly exhaust reservoirs.

Project #6 - 2010

Protect/reinforce sole source water main from city to eastern customers and to PUD's Roundtree Reservoir.

Slope stabilization is needed in the area near 2010-2012 Lindberg Rd.
The lower Elwha fault zone runs through this area.

Priority Rating: High
Responsibility: Public Works
Timing: 1-3 years
Potential Funding: FEMA, CFP, Grants/Loans
Hazard Mitigated: This area is prone to slides and would benefit from stabilization. City transmission line and PUD water source would be protected.

2. City of Port Angeles - continued

Project #7 - 2010

Peabody Heights Reservoir Earthen Dam Reinforcement.

The current earthen dam is over 80 years old and is a 7 million gallon reservoir serving the City of Port Angeles. The north wall has had failures in the past and over 50% of the reservoir is formed by an earthen dam. This reservoir has a pump station that serves upper zone reservoir and transmission area. Peninsula College, the PUD and lower zone reservoirs are served by this station.

Priority Rating:	High
Responsibility:	Public Works
Timing:	1-3 years
Potential Funding:	FEMA, CFP, Grants/Loans
Hazard Mitigated:	It is currently surveyed (annually) for faults. In the case of a moderate earthquake, the dam is in jeopardy of failure. Loss of reservoir would eliminate half of the city's reserve water supply. Reinforcement could help mitigate this possibility.

Project #8 – 2010 - Sewer Pump Station Power Upgrades

Currently, the vast majority of sewer waste movement in the City of Port Angeles is through pump stations (as opposed to gravity). Out of a total of 16 pump stations, all but 5 do not have a redundant power supply.

Priority Rating:	Medium
Responsibility:	Public Works Wastewater
Timing:	1-3 years
Potential Funding:	FEMA
Hazard Mitigated:	Currently, many of the City's pump stations do not have secondary power in case of long term interruption. A power outage could affect the City's ability to move waste water effectively, leading to sewer back-ups. Adding generators to pump stations would mitigate.

2. City of Port Angeles - continued

Project #9 – 2010 - Update Flood Assessment

The current flood assessment mapping was completed between 1980 and 1990. There have been significant changes since that time (Port of Port Angeles property has been changed due to fill, for example) that necessitate a fresh look. Updating the assessment would require surveying, new maps, GPS data points and descriptions of areas. Newer technology would allow the data to be compiled into a GIS presentation.

Priority Rating:	Medium
Responsibility:	Community & Economic Development Department
Timing:	1-5 years
Potential Funding:	FEMA / DOE
Hazard Mitigated:	Due to the fact that current flood assessment mapping is not accurate in many locations, it is impossible to accurately predict the impact of flooding. An updated, accurate flood plan would enable the city to update its existing plan, insuring critical facilities are not built within an identified hazard area.

Project #10 – 2010 - Upgrade to Shorelines

While portions of the shoreline areas of Port Angeles have received federal monies and have undergone repair, some areas are still in need of remediation and maintenance projects. Three shoreline areas were identified. They are: 1) Red Lion Hotel to Rayonier property, 2) On Marine Drive around the Boat Haven and 3) The entire inside of Ediz Hook. Projects include replacing hard armoring, landslide repair and rechanneling ditches and clearing drainage.

Priority Rating:	High
Responsibility:	Community and Economic Development Department / Public Works & Utilities
Timing:	1-5 years
Potential Funding:	FEMA / DNR / Grants / Private
Hazard Mitigated:	Shoreline repair and maintenance is essential to protect property, the Olympic Discovery trail, the manufacturing water main from the Elwha River and boat launches against winter storms.

2. City of Port Angeles - continued

Project #11 - 2010

Tumwater Street Bridge Approach Improvement

Tumwater Street is a major East / West arterial.

Priority Rating:	Medium
Responsibility:	Public Works
Timing:	1-5 years
Potential Funding:	FEMA / DOT
Hazard Mitigated:	The bridge itself is in good shape, but the approaches to both sides could be significantly impacted by moderate earthquake, severely impacting traffic mobility to the waterfront.

Project #12 – 2010 - Nippon Log-pond Bridge

Sheet piling on the East and West ends are beginning to deteriorate. The repair would include replacing the sheets to protect the banks and the channel. Not only would failure take out the road, but would reroute the channel and erode nearby areas. Potentially could damage Nippon's administration buildings.

Priority Rating:	Medium
Responsibility:	Public Works Engineering
Timing:	10-15 years
Potential Funding:	FEMA, CFP, Surface Transportation Program (Federal)
Hazard Mitigated:	This area needs work and a failure would cut off Ediz Hook and the US Coast Guard Station to vehicular traffic.

Project #13 – 2010

Upgrade Backup Power to City Hall

Currently, City Hall runs a 75 kw generator for power outages. That generator is assigned emergency lighting and data storage protection. It is currently running at capacity. The Vern Burton gym (which is designated as an emergency shelter in the CEMP, would not have heat (due to lack of generator capacity) if power was lost. Additionally, PENCOM's backup generator (25 kW) uses City Hall's generator as a failsafe. A new generator, capable of 150 kW is necessary for current and future demand.

2. City of Port Angeles – continued

Priority Rating:	Medium
Responsibility:	Public Works Utility, Information Services
Timing:	1-5 years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	This upgrade would ensure data storage, heat to Vern Burton and various other power needs are met in case of emergency.

Project #14 - 2010

Install Backup Power for City Corp Yard

The City Corp Yard is currently without backup power. In addition to the day-to-day functions of the Corp Yard, which serves as the operations center for the City's Street Division; Equipment Services, Water, Sewer, Stormwater, and Solid Waste utilities.

Information Services is in the process of installing a backup server room on that site. Additionally, the Corp Yard could serve as an Emergency Operations Center if needed.

A 75 kW generator is needed.

Priority Rating:	High
Responsibility:	Public Works Utilities
Timing:	1-5 years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	This upgrade would ensure backup of data storage for the City, allow normal function of the Corp yard departments, and allow EOC operation.

Project #15 - 2010

Install Backup Power for Light Operations Facility

The Electric Utility Operations building serves as the dispatch center for all Electric Utility operations during power outages, emergencies, etc. Currently, the facility has no backup power. Additionally, the overhead power lines to that facility are compromised by large trees along 18th Street that have caused numerous power outages in the past.

Priority Rating:	High
Responsibility:	Public Works Electric Utility
Timing:	1-3 years
Potential Funding:	FEMA, CFP
Hazard Mitigated:	Backup power to this facility would ensure timely dispatching of Electric Utility resources during an emergency and ensure adequate functioning during routine power outages.

2. City of Port Angeles - continued

Project #16 – 2010 - Fiber Optic Network Upgrade

Currently within the City’s fiber optic infrastructure, there are eight “single points of failure.”

Each of the following sites have no redundant fiber optic feeds: 1) Fire Department, 2)

City Hall, 3) Police Department, 4) Light Operations, 5) Corp Yard, 6) Water Treatment

Facility, 7) Wastewater Treatment Facility and 8) The Water Utility’s Ranney Collector.

Adding redundant feeds has been recommended by outside consultants, as well as City staff.

Estimated cost: \$315,000.

Priority Rating:	High
Responsibility:	Public Works Utilities
Timing:	1-5 years
Potential Funding:	FEMA, NTIA (National Telecommunications and Information Administration) Grant
Hazard Mitigated:	Currently, losing any one feed to a facility could impact voice and data transmission and surveillance cameras. Adding redundancy to the system would improve odds for continued service after accident or disaster.

Project #17 - 2010

Adopt the Hazard Mitigation Plan for the City of Port Angeles.

Priority Rating:	High
Responsibility:	City of Port Angeles Department of Community Development; Adopted by City Council
Timing:	1 year
Potential Funding:	N/A
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards.

&&&

2. City of Port Angeles - continued

PROJECT UPDATES FROM 2004 PLAN

Project #1 – 2004

Adopt the Hazard Mitigation Plan as a “stand-alone” plan for the City of Port Angeles.

Outcome:

The City of Port Angeles adopted the Hazard Mitigation Plan by resolution #9-04, dated May 18, 2004.

Priority Rating:	High
Responsibility:	City of Port Angeles Department of Community Development; Adopted by City Council
Timing:	1 year
Potential Funding:	N/A
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards.

Project #2 – 2004

Develop and adopt a new section under the Transportation element of the City Comprehensive Plan, to address the need for reliable access, through planned redundancy and upgrading of routes and transportation support facilities.

Outcome:

Projects for a secondary transportation route are included in the city’s Capital Facilities Plan.

Priority Rating:	High
Responsibility:	City of Port Angeles Department of Community Development; Adopted by City Council
Timing:	1 to 3 years
Potential Funding:	City budget
Hazard Mitigated:	Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

2. City of Port Angeles - continued

Project #3 – 2004

Update subdivision code for wildfire protection, including setback standards or driveway widths and turnarounds for emergency vehicle access. Identify mitigation measures, which may include setting standards in the Building Codes for vegetation buffers, fire-resistant vegetation or fire-resistant building materials in areas that are susceptible to urban/wildland interface fires.

Outcome:

A study was completed through Peninsula College that identified the area's risk to wildfires. The county fire chiefs are actively pursuing county-wide adoption of codes and standards that reduces the area's wildland fire / urban interface risks.

Priority Rating: High
Responsibility: City of Port Angeles Fire Department and Department of Community Development; Adopted by City Council
Timing: 2 to 3 years
Potential Funding: City budget, GMA, U.S. Forest Service, BLM
Hazard Mitigated: Urban/wildland fire.

Project #4 – 2004

Determine causes of slope failure (bluffs and steep ravines) in Port Angeles and identify alternative mitigation strategies, including possible re-routing of seeps, vegetation management and slope stabilization. Prepare a budget and scope to mitigate for slope failure in areas adjacent to critical City facilities and/or areas with potential high consequence loss.

Outcome:

Storm water management to prevent excessive groundwater near marine bluffs and other steep slopes have been addressed through a city Storm Water Management manual.

Priority Rating: High. Properties in Port Angeles that are vulnerable to slides include residential neighborhoods and key commercial and industrial centers.
Responsibility: City of Port Angeles Public Works and Utilities Department and Department of Community Development
Timing: 1 to 3 years
Potential Funding: City budget, HMGP, GMA grant, Coastal Zone Management Grant, WSDOT
Hazard Mitigated: Landslide and erosion.

2. City of Port Angeles - continued

Project #5 – 2004

Create a Vegetation Management Policy for City of Port Angeles, especially for steep slopes.

Outcome:

City ordinance Title 15 has been updated in an attempt to control vegetation management on stream ravines and marine bluffs.

Priority Rating:	Medium. The role of vegetation (including root systems, weight and other characteristics) in slope stabilization/destabilization will be defined in relation to underlying geology as the basis for the management policy.
Responsibility:	City of Port Angeles Public Works and Utilities Department and Department of Community Development
Timing:	3 to 5 years
Potential Funding:	City budget, HMGP, GMA, CZM or other grant
Hazard Mitigated:	Landslide and erosion.

Project #6 – 2004

Replace both of the 8th Street Bridges.

Outcome:

Completed in 2009.

Priority Rating:	High
Responsibility:	City of Port Angeles Public Works Department with WSDOT
Timing:	1 to 3 years
Potential Funding:	City budget, Public Works Trust Fund, WSDOT
Hazard Mitigated:	Seismic.

Project #7 – 2004

Acquire large-diameter fire hoses.

Outcome:

Completed in 2007.

Priority Rating:	High. In the event of a major seismic event, it is probable that the city water lines will be broken. The large-diameter hoses will enable to City to draft from the Strait, thereby providing additional water supply.
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2. City of Port Angeles – continued

Responsibility: City of Port Angeles Fire Department
Timing: 1 to 3 years
Potential Funding: City budget
Hazard Mitigated: Fire.

Project #8 – 2004

Prepare a human-induced Hazard Mitigation Plan that can supplement the Hazard Mitigation Plan prepared for natural hazards.

Outcome:

This item is eliminated as the focus of this plan is natural, not human-induced, disasters.

Priority Rating: High
Responsibility: City of Port Angeles Fire Department and City of Port Angeles Department of Community Development (assisted by others, such as Clallam County)
Timing: 1 to 3 years
Potential Funding: Homeland Security grant, WSDOT, other grant funding
Hazard Mitigated: Human-induced.

Project #9 – 2004

Create a reliable backup program for critical City data to allow City operations to remain functional during a post-disaster recovery period and beyond.

Outcome:

Has not been completed to date but remains a high priority.

Priority Rating: High
Responsibility: City of Port Angeles Finance Department (Information Technology)
Timing: 2 years
Potential Funding: City budget
Hazard Mitigated: Cascading effects from all key hazards.

End of update for City of Port Angeles

3. CITY OF SEQUIM

NEW PROJECTS

Project #1 – 2010

Design and construct a third reservoir and create a redundancy of water sources.

- Priority Rating:** High. (a) The new Water Reservoir will be located in the west side of the city, near 7th Avenue and Happy Valley Road, with proper valves that will allow the city to continue serving medical, fire and residents with water during a hazard or emergency event; and (b) the city has a Class “A” reuse water and a holding pond. The city will be installing more reuse fire hydrants in strategic locations, providing another alternative to fire fighting and preservation of life.
- Responsibility:** City of Sequim Public Works Department
- Timing:** 2 years for water reservoir.
- Potential Funding:** City of Sequim
- Hazard Mitigated:** Flooding, Fire, Seismic.

Project #2 – 2010

Establish a reliable power source to the water reuse facility.

- Priority Rating:** High. Replace above ground power with underground power to avoid interruption of electrical services to the water reuse facility during severe weather.
- Responsibility:** City of Sequim, Public Works
- Timing:** Next 3 – 5 years.
- Potential Funding:** City of Sequim, property owners, developers, PUD
- Hazard Mitigated:** Severe storms.

Project #3 - 2010

Establish a reliable power source to Battelle Industries.

- Priority Rating:** High. Replace above ground power with underground power to avoid interruption of electrical services to the water reuse facility during severe weather.
- Responsibility:** City of Sequim, Public Works, Battelle

3. City of Sequim – continued

Timing: Next 3 – 5 years.
Potential Funding: City of Sequim, property owners, developers, PUD, Federal
Hazard Mitigated: Severe storms.

Project #4 – 2010

Purchase additional heavy equipment for use during severe storms.

Priority Rating: High. Need additional equipment, dump trucks and loaders, for snow removal, road clearing, sandbagging, storm drain clearing, etc. during severe weather to make roads safe for pedestrians, drivers and emergency vehicles.
Responsibility: City of Sequim, Public Works
Timing: 0 – 5 years.
Potential Funding: City of Sequim
Hazard Mitigated: Severe storms, flooding.

Project #5 - 2010

Add to current storm drain system, to alleviate flooding streets, homes and buildings.

Priority Rating: High. Add piping and drains to current system to reduce flooding and increase control of storm water to reduce the risk of flooding.
Responsibility: City of Sequim, Public Works
Timing: 0 – 5 years.
Potential Funding: City of Sequim, State of Washington
Hazard Mitigated: Severe storms, flooding.

Project #6 – 2010

Create a reliable backup program for critical city data to allow city operations
To remain functional during a post-disaster recovery period and beyond.

Priority Rating: High.
Responsibility: City of Sequim Finance Department (Information Technology)
Timing: 2 years.
Potential Funding: City budget.
Hazard Mitigated: Cascading effects from all key hazards.

3. City of Sequim – continued

Project #7 – 2010

Adopt Hazard Mitigation Plan by City of Sequim.

Priority Rating: High
Responsibility: City of Sequim Planning Department
Timing: 1 year
Potential Funding: N/A
Hazard Mitigated: All key hazards.

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PROJECT UPDATES FROM 2004 PLAN

Project #1 – 2004

Adopt Hazard Mitigation Plan as a standalone document that the planning and public works departments will use as a reference during planning processes.

Outcome:

Adopted by Resolution R-2004-12.

Priority Rating: High
Responsibility: City of Sequim Planning Department
Timing: 2004, during the Comprehensive Plan update
Potential Funding: City operating budget
Hazard Mitigated: All key hazards.

Project #2 – 2004 – Revised 2010

Reconstruction of Bell Creek between Sequim Avenue and Carrie Blake Park to address seasonal flooding.

Priority Rating: High. This project will assist in reducing flooding by improving control of storm water. The reconstruction, buffer zones and maintenance of this creek will allow water from storms and irrigation use to flow through a controlled system, reducing the possibility of flooding. Bell Creek is a Type III Fish Bearing Stream as well as a Type F Salmon Bearing Stream.

Responsibility: City of Sequim Public Works Department

3. City of Sequim – continued

Timing: 2 to 3 years
Potential Funding: City of Sequim, with cooperation of property owners, developers, irrigation districts, WDFW, will work together to mitigate all Bell Creek issues and provide a facility that will reduce the possibility of flooding and improve water flow.
Hazard Mitigated: Flooding.

Project #3 – 2004

Design and construct a second reservoir and create redundancy of water sources (there are three water sources in different aquifers and different locations).

Outcome:

Complete, Solana Reservoir constructed in 2007.

Priority Rating: High. (a) The new Water Reservoir will be located in the east side of the City with proper valves that will allow the City to continue serving medical, fire and residents with water during a hazard or emergency event; and (b) The City has Class “A” reuse water and a holding pond. The City will be installing more reuse fire hydrants in strategic locations, providing another alternative to fire fighting and preservation of life.
Responsibility: City of Sequim Public Works Department
Timing: 2 years for water reservoir (cost of approximately \$2 million).
2 - 4 years for reuse fire hydrants.
Potential Funding: City
Hazard Mitigated: Seismic, Fire, Flooding.

Project #4 – 2004

Construct looped water system.

Outcome:

Ongoing.

Priority Rating: **High.** Looping the water system permits the City, through the design and placement of valves, to regulate flow and shut off service/reroute in the case of line damage, e.g., during an earthquake.
Responsibility: City of Sequim Public Works Department
Timing: To be completed within next 3 years
Potential Funding: City
Hazard Mitigated: Flooding, Fire, Seismic. End of Updates for City Of Sequim

4. CLALLAM COUNTY

NEW AND REVISED PROJECTS

Project #1 - 2010

Clallam County Sheriff's Office manages a VoIP network for first responders throughout the Olympic Peninsula. The network is known as OPSCAN. In the Forks area there is a single point of failure on the system with a T-1 connection from Neah Bay to Forks Police Department. During severe storms that link has a tendency to fail. It is a T-1 provided by Century Tel. We need to establish a backup link but have not had the necessary funding to do so. This link has provided communications when all other methods had failed during severe weather. It provides a link for communication with dispatch and first responders in the West end of Clallam County.

Priority Rating: High
Responsibility: OPSCAN Administrator
Timing: 6 mos. – 1 year
Potential Funding: OPSCAN Operations
Hazard Mitigated: Communication with first responders in the west end of Clallam County during emergencies. (pm)

Project # 2 – 2010

Inventory of dikes, levees, and flood protection structures on Clallam County rivers to assess what level of protection is intended, what level of protections is actually provided, and who is responsible for long-term maintenance.

Priority Rating: High. Development and building decisions are, in some cases, being made without an adequate basis of information regarding flood hazard, due to the fact that too little is known about flood control structures that are assumed to be providing protection.
Responsibility: DCD, Public Works, USACE, WDFW, and WSDOT.
Timing: 2 – 4 years.
Potential Funding: Grants
Hazard Mitigated: Flooding. (bm)

Project #3 - 2010

Inventory public utilities including water supplies, sewer systems, and solid-waste handling facilities. Assess current status, vulnerabilities, backup capabilities, and needed improvements.

4. Clallam County - continued

Priority Rating: High.
Responsibility: Sequim, Forks, Port Angeles, and Clallam County Public Works Departments and Environmental Health Division, WSDOH and WDOE.
Timing: 1 – 3 years.
Potential Funding: Grants
Hazard Mitigated: Nearly all natural hazards that might disrupt utility operations. (bm)

Project #4 - 2010

Set back of the Army Corps dike located in the lower reach of the Dungeness River. When built in the mid-1960's, the dike infringed on the river's floodplain. The resulting Constrained channel has aggraded and now sits several feet above the adjacent land. Modeling conducted by the Bureau of Reclamation shows that a breach of the dike could result in serious flooding, threatening safety and property of nearby residents.

Priority Rating: High.
Responsibility: DCD, Army Corps of Engineers, and Clallam County Public Works
Timing: Incremental over 5 years.
Potential Funding: SRFB and Army Corps of Engineers
Hazard Mitigated: Riverine processes.
Status: Acquisition and design are underway. (cl)

Project #5 - 2010

Build new Emergency Operations Center separately located from the courthouse in a hazard free zone perhaps combining resources with compatible agencies such as dispatch services enabling cooperative response during a prolonged event.

Priority Rating: Medium
Responsibility: Emergency Operations Center Advisory Group
Timing: 1 – 3 years
Potential Funding: County capital project funds, E911 capital reserve, real estate excise tax, stimulus or other grant funding.
Hazard Mitigated: Relocation will address the present hazard of the Emergency Operations Center being located below grade, adjacent to known erosion, landslide and tsunami hazards in a building that is over thirty years old and not retrofitted for seismic hazard. (rp)

4. Clallam County - continued

Project #6 - 2010

Study the need for a seismic retrofit of newer portion of Clallam County Courthouse.

Priority Rating:	High
Responsibility:	Clallam County Public Works Maintenance and Facilities
Timing:	1-3 years
Potential Funding:	County capital projects funds, FEMA Hazard Mitigation grant funding
Hazard Mitigated:	Protects county infrastructure ensuring that county services will be minimally impacted during a key hazard event. (rp)

Project #2 – 2004 – Updated 2010

Develop and adopt a new section as part of a new Natural Hazard Reduction element, to address the need for reliable, alternative access, for all areas of Clallam County through planned redundancy improving resiliency of existing transportation infrastructure and upgrading transportation support facilities.

Initial Outcome:

Through an EPA grant, DCD is conducting stormwater investigations to better inform stormwater regulations. The Clallam Conservation District has written a Small Projects Manual that answers many questions about designing to minimize the need for stormwater treatment infrastructure.

Priority Rating:	High
Responsibility:	Clallam County DCD and Clallam County Department of Public Works. All amendments to Comprehensive Plan must be reviewed by the Clallam County Planning Commission and adopted by the Board of Clallam County Commissioners.
Timing:	2 to 4 years
Potential Funding:	County operating budget, grant funding
Hazard Mitigated:	Achieves a plan goal of maintaining transportation routes during and after all key hazard events. (bm)

Project #4 – 2004 – Updated 2010

Develop an alternative route for portion of U.S. Highway 112 between Sekiu and Neah Bay to reduce vulnerability to landslides.

4. Clallam County - continued

Priority Rating:	High. Currently most road closures are isolating to residents of the northwest portion of the County.
Responsibility:	Clallam County Emergency Manager will coordinate and work with Clallam County Road Engineer, Makah Tribe and WSDOT and private property owners.
Timing:	1 to 3 years
Potential Funding:	WSDOT, FHWA, CRAB, BIA, U.S. Forest Service, National Park Service
Hazard Mitigated:	Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #7 – 2004 – Revised 2010

Slightly east of the intersection of SR112 and SR 113, the Pysht Road is frequently flooded. Conduct a hydrologic survey of this stretch of the river and evaluate options for improving reliability of the state highway.

Priority Rating:	Medium. Road closures occur 2 to 3 times per year, isolating residents (rating is medium rather than high because of low population).
Responsibility:	Clallam County Emergency Manager will coordinate and work with WSDOT, Clallam County, and private property owners.
Timing:	3 to 5 years
Potential Funding:	WSDOT, FHWA, CRAB
Hazard Mitigated:	Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #9 – 2004 – Revised 2010

Evaluate the Hoko-Ozette Road and the Hoko River to identify specific projects that would increase the resilience of the road during flood events.

Priority Rating:	High. This road is regularly shut down during winter storms and flooding due to over topping, washouts, and culvert obstructions.
Responsibility:	Clallam County Public Works
Timing:	1 to 3 years
Potential Funding:	County, WDFW, FHWA
Hazard Mitigated:	Flooding, landslides, severe storms.

4. Clallam County - continued

Project #14 – 2004 – Updated 2010

WSDOT conducted a research study of the lower Bogachiel River in 2004 and had some recommended solutions. Evaluate options for SR110 between Moro and the Bogachiel River bridge that would allow the highway to remain open during flood events.

- Priority Rating:** High. This quarter mile stretch of SR 110 floods whenever the river stage reaches 40 feet, which happens usually a couple of times each year. Resolving the flood problem at this location will mitigate two issues. It will alleviate transportation disruptions between Forks and LaPush and will protect the main water line to the Quileute Indian Reservation.
- Responsibility:** Clallam County Emergency Manager with WSDOT, the Quileute Tribe and the Clallam County Public Works.
- Timing:** 1 to 3 years
- Potential Funding:** WSDOT, FHWA, U.S. Army Corps of Engineers, BIA Roads Program
- Hazard Mitigated:** Riverine processes.

Project #17 – 2004 – Revised 2010

Identify the specific characteristics of coastal bluffs (geologic, hydro geologic, vegetation) where bluff retreat is naturally occurring in Clallam County, and where natural bluff retreat is being accelerated by development activities Multiple corrective actions will be implemented including property acquisition, increasing minimum lot size/set backs, drainage improvements and/or septic improvements on existing properties.

- Priority Rating:** High. The majority of accelerated bluff retreat appears to be the result of a variety of causes including drainage from houses at the top of the bluff, improper storm water management, removal of vegetation, and septic drain fields at the top of the bluff. These causes likely reflect a combination of historic development practices and site management that are contributing to an accelerating the rate of coastal bluff erosion.
- Responsibility:** Clallam County DCD and Clallam County Public Works
- Timing:** 3 years
- Potential Funding:** GMA, CZM, SRFB, HMGP
- Hazard Mitigated:** Landslide and erosion.

4. Clallam County - continued

Project #18 – 2004 – Revised 2010

Provide FireWise training outreach throughout the County. The FireWise Program, which stresses vegetation management guidelines as well as buffers, could serve as the basis for updates to development regulations and landscape planning and maintenance to reduce vulnerability to wildfires. Also need to identify areas of the county that have particularly high exposure to urban interface fire damage and modify standards regarding construction materials, access for fire vehicles, and roof materials.

- Priority Rating:** High. Clallam County is at high exposure to damage from wildfire in rural, residential areas.
- Responsibility:** Clallam County Emergency Manager, DCD and Public Works Department, and coordinated with Fire Chief's Association. All new or amended development regulations must be reviewed by the Clallam County Planning Commission and adopted by the Board of Clallam County Commissioners.
- Timing:** 2 to 4 years
- Potential Funding:** County budget, Growth Management Act (GMA) grant, CDBG, U.S. Forest Service, BLM
- Hazard Mitigated:** Urban/wildland fire.

Project #19 - 2010

In June 2008 WSDOT, finished a study identifying all Structurally Deficient Bridges in Washington State. Structurally deficient means that a bridge requires repair or replacement of a certain component but does not imply that the bridge is in danger of collapse or unsafe to the traveling public. Although these bridges are not owned or maintained by the county their failure would severely impact safety and emergency response and inflict significant economic hardship due to our reliance on tourism dollars.

The three bridges listed in Clallam County are:
Sol Duc River #2 bridge on SR101 @ MP203.15
McDonnell Creek bridge on SR101 @ MP258.21
Green Creek bridge on SR 112 @ MP23.72.

- Priority Rating/status:** Monitor through inspection – program future repairs.
- Responsibility:** WSDOT
- Timing:** Unknown
- Potential Funding:** WSDOT
- Hazard Mitigated:** Disruption of main transportation route through county.

4. Clallam County – continued

Project #20 – 2010

Adopt Hazard Mitigation Play by Resolution.

Priority Rating: High
Responsibility: Sheriff's Office, Emergency Management Division
Timing: 1 year
Potential Funding: N/A
Hazard Mitigated: Establishes the framework for mitigation of all key hazards.

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PROJECT UPDATES FROM 2004 PLAN

Project #1 – 2004

Bring new partners into the Plan including Tribes, PUDs, School Districts, Fire Districts and/or others.

Outcome:

No change in partners in last five years. During the next term of the HMP, the tribes are preparing their own hazard mitigation plans and we have added a water district, school district and a public utility district to our plan participants.

Responsibility: Clallam County Emergency Management to coordinate amendment(s) to this Plan and bringing in new partners.
Timing: 1 to 4 years
Potential Funding: N/A
Hazard Mitigated: Establishes the framework for mitigation of all key hazards.

Project #3 – 2004

Use vulnerability to hazards of transportation routes in Clallam County as one of the factors in establishing rating in the Transportation Improvement Plan (TIP).

Outcome:

Vulnerability to hazards is one of the factors routinely taken into account in the preparation of the TIP.

4. Clallam County – continued

Priority Rating: Medium
Responsibility: Clallam County DCD and Clallam County Department of Public Works.
Timing: 2 to 4 years
Potential Funding: County operating budget, grant funding
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #5 – 2004

Replace bridge across the Elwha River at the Elwha River Road.

Outcome:

Completion and opening September 2009.

Priority Rating: High. There is no redundancy in the northwest portion of the county. If something happens to a State bridge, this area would be isolated (one State bridge is a 1950s vintage structure; the other a 1970s). Neither meets current seismic code.
Responsibility: Clallam County Emergency Manager will coordinate and work with Clallam County Road Engineer and WSDOT
Timing: 1 to 3 years
Potential Funding: WSDOT, FHWA, CRAB, BIA
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #6 – 2004

Repair Black Diamond Road washout.

Outcome:

Completed in 2007.

Priority Rating: High. The washout has been gradually growing in severity. If this washout project is not undertaken, a catastrophic washout could occur, thereby destroying one of two access routes for a rapidly developing portion of the County south of Port Angeles. This rapid development has contributed to an increased rate of stormwater runoff that threatens the road stability.
Responsibility: County Emergency Manager will coordinate/work with County Road Engineer.
Timing: 1 to 3 years

4. Clallam County - continued

Potential Funding: County, WSDOT
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #8 – 2004

Create an alternate temporary route for the Morse Creek Bridge in the event of bridge closure.

Outcome:

Two alternate Morse Creek crossings have been identified, one above the SR 101 bridge in Four Seasons Park, and one below the SR 101 bridge in Four Seasons Ranch.

Priority Rating: Medium. Morse Creek Bridge is one of the more critical bridges for access on Highway 101, and is located in a landslide hazard area.
Responsibility: WSDOT and Clallam County Road Engineer with Four Seasons Community Association
Timing: 1 to 3 years
Potential Funding: WSDOT, FHWA, U.S. Forest Service
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #10 – 2004

Identify alternate routes for Hoko-Ozette Road for residents and emergency responders and form agreements to maintain access along alternate routes.

Outcome:

Not yet started.

Priority Rating: Medium. This road is regularly shut down during winter storms and flooding.
Responsibility: County Emergency Manager and Road Engineer, property owners, National Park Service
Timing: 1 to 3 years
Potential Funding: WSDOT, County, Private landowners
Hazard Mitigated: Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

4. Clallam County – continued

Project #11 – 2004

Participate in the Community Rating System (CRS) Program under the NFIP.

Outcome:

In 2005, DCD undertook an investigation into the potential benefits of participating in CRS. At that time, it was determined that CRS may offer limited benefit to policy holders in Clallam County. Funding and workload limitations would also constrain county staff in providing the required CRS documentation.

Priority Rating:	Medium
Responsibility:	Clallam County DCD Building Division assisted by Public Works Department
Timing:	1 to 3 years
Potential Funding:	County operating budget
Hazard Mitigated:	Riverine processes.

Project #12 – 2004

Acquire flood-prone property in the River's End area of the Dungeness River (continue Phase I of the River's End Project) and enforce current regulations pertaining to septic systems that currently are inadequate. Complete the historic conditions analysis of the River's End (Phase II of the River's End Project). Subsequently, initiate Phase III of the River's End Project, which is to undertake the floodplain and estuary restoration.

Outcome:

At this time, partners in the Rivers End project have purchased about 61 acres. Structures and infrastructure has been removed, and restoration is underway.

Priority Rating:	High to Medium
Responsibility:	Clallam County DCD
Timing:	Home Acquisition: 2 years
Potential Funding:	SRFB, WDFW Coastal Wetlands Fund
Hazard Mitigated:	Riverine processes.

4. Clallam County - continued

Project #13 – 2004

Purchase six to eight homes on Kinkade Island (four to five toward the downstream side and two to three homes on the other side of the channel).

Outcome:

Efforts to secure funding for purchase of Kinkade Island properties has thus far met with no success. Due to the high priority of flood hazard mitigation projects in the lower reaches of the Dungeness River, county staff has focused acquisition and restoration efforts in the areas of Rivers End and the Army Corps dike.

Priority Rating:	High. Top priority will be one or two homes on the downstream end of Kinkade Channel, which are at the highest risk and where the septic system has been inundated.
Responsibility:	Clallam County DCD
Timing:	Incremental over 5 years
Potential Funding:	HMGP, FCAAP, SRFB
Hazard Mitigated:	Riverine processes.

Project #15 – 2004

Conduct a countywide seismic hazard analysis of fire stations (six county fire districts and one fire department [Port Angeles]) to evaluate prioritization for mitigation or re-siting.

Outcome:

Not done yet.

Priority Rating:	High. One fire station (Fire Station 31-Dungeness) is located in a hot spot of three hazard layers and would be a high consequence loss. All fire stations in the County are high consequence loss facilities.
Responsibility:	Port Angeles Fire Chief with the Fire Chief's Association
Timing:	1 to 3 years
Potential Funding:	Bond issue; CDBG, HMGP
Hazard Mitigated:	Seismic-related.

Project #16 – 2004

~~The County will identify owners of parcels greater than 500 acres where problem roads are identified. Clallam County will coordinate with Washington State DNR to evaluate whether property owners are in compliance with forest practice rules for developing and implementing road maintenance and abandonment plans. Subsequently, as the basis for remediation efforts, the County will prioritize county roads and properties being affected by sediment delivered from roads used to access forest lands.~~

Priority Rating: ~~Medium~~

Responsibility: ~~Clallam County DCD will coordinate with Washington State DNR and could initiate a Memorandum of Understanding with the Water Resource Inventory Area (WRIA) 19.~~

Timing: ~~3 years~~

Potential Funding: ~~FCAAP, SRFB, HMGP~~

Hazard Mitigated: ~~Landslide and erosion.~~

End of Clallam County projects

5. OLYMPIC MEDICAL CENTER

Project #1 - 2010

Install second electric utility supply to Olympic Medical Center. In conjunction with the City of Port Angeles Project #2 – 2010, complete installation of infrastructure installed during the East Wing expansion to provide redundant electrical power to the Hospital.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: Provides redundancy to the electrical system providing a more reliable power supply to the area's only hospital.

Project #2 - 2010

Minimize elements that represent potential seismic concerns.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: Fire suppression system is generally laterally braced but lacks vertical bracing; additional anchorage or bracing for nonstructural elements can reduce damage and enhance safety.

Project #3 - 2010

Minimize elements that represent potential seismic concerns.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: Suspended ceilings generally lack bracing presenting a falling and egress hazard.

5. Olympic Medical Center – continued

Project #4 - 2010

Analyze and seismically upgrade the original Hospital tower to reinforce concrete shear wall structure with additional shear walls at South elevation.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: By implementing upgrades potential damage to Olympic Medical Center could be reduced.

Project #5 - 2010

Propane fuel storage: The propane tank on the West side of the Hospital lacks anchorage but an automatic seismic shut off valve is present.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: By implementing upgrades potential damage to Olympic Medical Center could be reduced.

Project #6 - 2010

Unanchored shelves, cabinets and equipment.

Priority Rating:

Responsibility: OMC Facilities

Timing: 1 to 5 years

Potential Funding: FEMA, CFP

Hazard Mitigated: Mitigate possibility of unanchored items falling or blocking egress.

Project #7 – 2010

Adopt Hazard Mitigation Plan by Olympic Medical Center.

5. Olympic Medical Center – continued

Priority Rating: High
Responsibility: Director or Emergency Services
Timing: 1 year
Potential Funding: N/A
Hazard Mitigated: Established the framework for mitigation of all key hazards.

PROJECT UPDATES FROM 2004 PLAN

Project #1 – 2004

Adopt the Hazard Mitigation Plan as an element of the Disaster Plan and Facilities Plan.

Outcome:
Complete.

Priority Rating: High
Responsibility: Director of Emergency Services
Timing: 1 year
Potential Funding: Operating budget
Hazard Mitigated: Establishes the framework for mitigation of all key hazards.

Project #2 – 2004

Prepare a long-term Facility Master Plan, including a feasibility study for an alternate location for the central Olympic Medical Center that considers characteristics of alternative sites, including flooding and bluff stability.

Outcome
Earthquake/site assessment complete. Mitigation strategies under review.

Priority Rating: High. The Olympic Medical Center is the largest health facility in the County. The Center's primary location is vulnerable to bluff erosion.
Responsibility: Olympic Medical Center Facilities Committee
Timing: 3 to 5 years, depending on funding
Potential Funding: Operating budget, grants
Hazard Mitigated: Landslide and erosion.

Project # 3 – 2004

Move current location of the waterline; the current location is on the bluff.

Outcome
Complete.

5. Olympic Medical Center – continued

Priority Rating: High
Responsibility: Olympic Medical Center Facilities Committee
Timing: 1 to 3 years
Potential Funding: Operating budgets.
Hazard Mitigated: Achieves a plan goal of maintaining the reliability of utilities.

Project # 4 - 2004

Add sections to the Hospital's Emergency Plan to address access during emergencies, including response, evacuation, and linkages outside of the community to facilitate mutual aid, as well as backup of utilities.

Outcome:

Enhanced emergency generator capabilities completed. Communication redundancies in place. MOU's with regional hospitals being developed. Developing OMC's Sequim Campus as additional medical access site for disaster planning.

Priority Rating: High
Responsibility: Olympic Medical Center Disaster and Facilities Committee
Timing: 1 to 3 years
Potential Funding: Operating budgets.
Hazard Mitigated: Achieves a plan goal of maintaining emergency services capability and reliability of utilities during and after key hazard events.

End of updates for Olympic Medical Center

6. PENINSULA COLLEGE

NEW PROJECTS

Project #1 - 2010

Renovate or replace the Forks extension site.

Priority Rating: Medium
Responsibility: Peninsula College President
Timing: Within 5 years
Potential Funding: ARRA/State Capital funds
Hazard Mitigated: Facility has a failing roof and is susceptible to significant flooding. Despite recent remodels, structural deficiencies still remain.
Status: Peninsula College has prepared a 'shovel ready' replacement project in partnership with the City of Forks as a potential ARRA project.

Project #2 - 2010

Renovate or replace the L Building on the main campus.

Priority Rating: Medium
Responsibility: Peninsula College President
Timing: Within 5 years
Potential Funding: State capital funds
Hazard Mitigated: The facility has deteriorating plumbing, no fire sprinkler system, minimal ventilation, no ADA access and infestation of carpenter ants has reduced structural integrity. The 2005 seismic assessment stated that the building does not meet current seismic design standards.
Status: Building replacement is pending 2011-2013 funding.

Project #3 -2010

Renovate or replace the LE building on the main campus.

Priority Rating: Medium
Responsibility: Peninsula College President
Timing: Within 5 years
Potential Funding: State Capital funds
Hazard Mitigated: The facility has deteriorating plumbing, no fire sprinkler system, and minimal ventilation.

6. Peninsula College - continued

Status: Building replacement is pending 2011-2013 capital funding.

Project #4 - 2010

Renovate or replace the N Building on the main campus.

Priority Rating: Medium
Responsibility: Peninsula College President
Timing: Within 5 years
Potential Funding: State Capital Funds
Hazard Mitigated: The facility underwent renovations in response to damage caused by the Nisqually earthquake (2001). Repairs addressed deficiencies that resulted from the earthquake but did not resolve overall structural weaknesses within the building. According to the 2005 seismic assessment, those deficiencies still remain in the building.

Project #5 - 2010

Repair the J Building on the main campus.

Priority Rating: Low
Responsibility: Peninsula College President
Timing: Within 5 years.
Potential Funding: State Capital Funds
Hazard Mitigated: The facility underwent renovations in response to damage caused by the Nisqually earthquake. Repairs addressed deficiencies that resulted from the earthquake but did not resolve overall structural weaknesses within the building. According to the 2005 seismic assessment, those deficiencies still remain in the building.

Project #6 - 2010

Renovate or replace the Q Building on the main campus.

Priority Rating: Low
Responsibility: Peninsula College President
Timing: Within 10 years
Potential Funding: State Capital Funds

6. Peninsula College - continued

Hazard Mitigated: The facility has inadequate roofing and structural cracks indicating a probability of failure in a seismic event. The 2005 seismic assessment stated that the building does not meet current seismic design standards.

Project #7 - 2010

Renovate or replace the P Building on the main campus.

Priority Rating: Low
Responsibility: Peninsula College President
Timing: Within 10 years.
Potential Funding: State Capital Funds
Hazard Mitigated: The facility has one unreinforced masonry wall which may result in a partially collapsed roof if the wall should fail. The 2005 seismic assessment stated that the building does not meet current seismic design standards.

Project #8 – 2010

Incorporate the Hazard Mitigation Plan as an element of the Facilities Master Plan.

Priority Rating: High
Responsibility: Peninsula College President
Timing: 1 year
Potential Funding: N/A
Hazard Mitigated: Establishes the framework for mitigation of all key hazards.

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PROJECT UPDATES FROM 2004 PLAN

Project #1 – 2004

Incorporate the Hazard Mitigation Plan as an element of the Facilities Master Plan.

Outcome:

The FMP is currently being updated by the Administrative Services Department and
The inclusion of the HMP is pending approval.

6. PENINSULA COLLEGE – continued

Priority Rating: High
Responsibility: Peninsula College President
Timing: In process.
Potential Funding: N/A

Project #2 – 2004

Conduct capital assessments on all college buildings.

Outcome:

The 2007 assessment is available. The 2009 assessment was conducted in early July and the Official documentation will be available between September and December 2009.

Priority Rating: High
Responsibility: Administrative Services in conjunction with the SBCTC
Timing: Every 2 years
Potential Funding: Funded by SBCTC
Hazard Mitigated: Ensures routine review of the structural integrity of campus facilities.

Project #3 – 2004

Conduct seismic analysis on all college buildings.

Outcome:

Completed in 2005 by Magnusson Klemencic Associates

Priority Rating: High
Responsibility: Administrative Services
Timing: 1 year
Potential Funding: College funds.
Hazard Mitigated: Determines the probably structural integrity of campus facilities within seismic events.

End of updates for Peninsula College.

7. PORT OF PORT ANGELES

NEW AND UPDATED PROJECTS

Project #1 – 2004 - Revised 2010

The Port Commissioners will adopt the Hazard Mitigation Plan.

Outcome:

The Port of Port Angeles Commission adopted the Hazard Mitigation Plan in Resolution 04-903, dated March 8, 2004.

Priority Rating:	High
Responsibility:	Public Works Manager present to the Port Commissioners
Timing:	6-12 months
Potential Funding:	None required
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards.

Project #2 – 2004 - Revised 2010

Conduct seismic analysis of Port facilities, including airport runways for features that could fail in an earthquake, so that repairs can be made before accidents occur.

Outcome:

The Port conducted in-house structural analyses/inspections of choice Port facilities after the 2004 adoption of the Hazard Mitigation Plan. Conducting in-house or contracted seismic/structural analyses of Port facilities is an on-going process due to limited resources.

Actions Resulting From Analyses

1. Facility Maintenance Building (112 S Valley St) - Seismic Bracing installed throughout interior.
 2. Admin Building (338 W First St) - Installed additional hangers on lighting fixtures.
 3. 10-10 Building (ACTI Complex) - Installed additional hangers on lighting fixtures
 4. Marine Terminal 1 - Installed additional cross bracing on finger pier.
 5. 1902 O Street Building – Installed additional hangers on lighting fixtures.
 6. Terminal 7 Truck Shop – Installed additional Seismic Bracing throughout interior.
- Also, in the summer of 2009 the Port participated in the National Science Foundation sponsored Seismic Risk Management for Port Systems Study survey.

Priority Rating:	Medium
Responsibility:	Public Works Manager
Timing:	Ongoing over facilities life span
Potential Funding:	FAA, WSDOT
Hazard Mitigated:	Seismic-related.

7. PORT OF PORT ANGELES - continued

Project #3 – 2004 - Revised 2010

Add a transportation element to the Port of Port Angeles Emergency Action Plan to address access during emergencies, which will include response, evacuation, and linkages outside of the community to facilitate mutual aid. This plan will include alternative facilities, such as for barging.

Outcome:

Project 3 has not been undertaken by the Port at this time due to the priority placed on allocating resources to well-defined economic development projects.

The goal of maintaining transportation routes during and after all key hazard events through the addition of a transportation element to the Port's Emergency Action Plan shall be undertaken when resources are available.

Priority Rating:	High
Responsibility:	Port of Port Angeles Planner
Timing:	1 to 3 years
Potential Funding:	Grant funding, WSDOT, Port operating budget
Hazard Mitigated:	Achieves a plan goal of maintaining transportation routes during and after all key hazard events.

Project #4 - 2010

Upgrade and perform maintenance of armored shoreline and marina breakwaters. The armored shoreline and breakwaters are located from Terminal 6 southeast to the Black Ball Ferry Terminal.

Priority Rating:	High
Responsibility:	Public Works Manager
Timing:	1 to 5 years
Potential Funding:	Grant funding, WSDOT, DNR, FEMA
Hazard Mitigated:	Shoreline maintenance and upgrades protect valuable and limited industrial and marine transportation property from severe storm and erosion damage.

Project #5 – 2010

Adopt the Hazard Mitigation Plan by resolution.

7. PORT OF PORT ANGELES – continued

Priority Rating:	High
Responsibility:	Public Works Manager present to Port of Port Angeles Commissioners
Timing:	1 year
Potential Funding:	N/A
Hazard Mitigated:	Establishes the framework for mitigation of all key hazards.

End of updates for Port of Port Angeles

8. PUBLIC UTILITY DISTRICT NO. 1 OF CLALLAM COUNTY

NEW PROJECTS

Project # 1 - 2010

The PUD has had extensive damage to existing overhead primary distribution lines throughout Clallam County. The PUD has studied specific areas of the county where undergrounding of overhead primary distributions lines would create a safer environment, provide higher service reliability, and reduce costs to customers. Due to the economy and revenue decline at the PUD, these projects have not been able to be considered in the budget. Clallam County experiences high winds each winter causing hundreds of thousands of dollars in damage to facilities. The high wind, snow, and dense tree canopy cause lengthy power outages, sometimes for days, in extremely low temperatures, which is a health and safety risk to our customers. Specific areas considered to be recurring and high risk due to number of customers served are: North Shore Lake Crescent, South Shore Lake Sutherland, Diamond Point Road, Deer Park Road, and Hoko Ozette Road

Priority Rating: High
Responsibility: PUD
Timing: 1-4 years
Potential Funding: PUD operating budget
Hazard Mitigated: Undergrounding of overhead primary distribution lines would create a safer environment for employees and customers, provide higher service reliability, and reduce costs to customers.

Project # 2 - 2010

The PUD Water Department has identified approximately 100 miles of Asbestos-Cement pipe that is old, aging, and brittle. Replacement of this pipe is cost prohibitive based on the PUD's current revenues and the economy. This pipe is very vulnerable to damage during an earthquake situation. Damage to this pipe would cause a severe health issue for customers and citizens of Clallam County.

Priority Rating: High
Responsibility: PUD
Timing: 1-4 years
Potential Funding: PUD operating budget
Hazard Mitigated: Replacement of Asbestos-Cement pipe would support county health issues during an earthquake.

8. PUBLIC UTILITY DISTRICT NO. 1 OF CLALLAM COUNTY - continued

Project # 3 - 2010

The PUD Water Department has identified several locations where water mains would pose a threat to public health if there should be erosion or a landslide. Each winter during storm season, there is considerable amounts of wash outs and damage to PUD facilities.

Should there be an earthquake or severe landslide in the County it poses a tremendous risk to the health and safety of our citizens and customers. Areas that have been reviewed are: water main from Morse Creek to Treatment Plant to Deer Park; water main from Hoko-Ozette Road to Eagle Point Road; Water Main to Upper Sekiu Reservoir; Replace Buried Creek crossing with Bridge crossing in 4 Seasons Park; Replace Buried Creek crossing in 4 Seasons Ranch and eliminate White Creek crossing to Lower LUD #3 Pump Station.

Priority Rating:	High
Responsibility:	PUD
Timing:	1-4 years
Potential Funding:	PUD operating budget
Hazard Mitigated:	Replacement of the water mains would ensure higher service reliability while reducing potential health risks to citizens and/or customer.

Project # 4 - 2010

The PUD Water Department has identified the Fairview Service area as a high risk concern for continued water service in times of drought conditions. The area relies on water from Morse Creek. During dry seasons, Morse Creek reaches a low level and the Department of

Ecology requires the PUD to mandatory water conservation until the creek reaches a certain level. The conservation periods are growing longer and are now occurring annually. The PUD Water Department has identified possible solutions for the service area however the costs are prohibitive with the current revenue streams. If the stream flow continues to decline there could be a potential of a high health risk to citizens and/or customers.

Priority Rating:	High
Responsibility:	PUD
Timing:	1-4 years
Potential Funding:	PUD operating budget
Hazard Mitigated:	Funding alternative water supply would mitigate the lack of water for customers and ensure a continuous water supply.

8. PUBLIC UTILITY DISTRICT NO. 1 OF CLALLAM COUNTY - continued

Project #5 - 2010

The PUD recently completed a study on tree trimming and hazards associated with existing tree canopy adjacent to transmission and distribution overhead lines. The study indicates a severe hazard associated with trees near power lines and shows that without additional funding for tree trimming and an aggressive program, the hazards will only continue to increase. The trees pose a significant risk to the health and welfare of customers. The PUD doesn't have the revenue or funds to increase the limit of tree trimming.

Priority Rating: High
Responsibility: PUD
Timing: 1-4 years
Potential Funding: PUD operating budget
Hazard Mitigated: Funding additional tree trimming would mitigate the potential hazards to customers.

Project #6 - 2010
Adopt Hazard Mitigation Plan.

Priority Rating: High
Responsibility: Operations Manager will take to Port Commissioners.
Timing: 1 year.
Potential Funding: N/A
Hazard Mitigated: Establishes the framework for mitigation of all key hazards.

End of projects for PUD

PART V - PLAN IMPLEMENTATION AND MAINTENANCE

A. ADOPTION OF PLAN BY THE LOCAL GOVERNMENT BODIES

Table IV-1 summarizes the adoption process of the Plan by Clallam County and the partners. A copy of the confirmation of adoption for each jurisdiction is provided in Appendix C.

Table IV-1. Adoption of Plan by Local Government Bodies

Partner	Designated Approving Body	How Accepted	Process
City of Forks	City Council	Resolution	Adopted by City Council.
City of Port Angeles	City Council	Resolution	Adopted by City Council.
City of Sequim	City Council	Resolution	Adopted by City Council.
Clallam County	Board of Commissioners	Resolution	Adopted by Clallam County Board of Commissioners.
Olympic Medical Center [Note: non-profit organization]	Approved by Olympic Medical Center Administration	Element of Environment of Care plan	The Disaster and Environment of Care Committee reviews with final approval by the Chief Executive Officer
Peninsula College	College President	Facilities Master Plan	Vice President of Administrative Services submits the FMP to the Facilities Master Plan Committee who makes a recommendation to the College President.
Port of Port Angeles	Port Commissioners	Resolution	Adopted by Port Commissioners at public meeting.
Public Utility District	PUD Commissioners	Resolution	Adopted by PUD Commissioners.

B. METHOD/SCHEDULE TO MONITOR, EVALUATE & UPDATE THE PLAN

Each of the partners has a somewhat different method and schedule for plan maintenance, as described below.

1. City of Forks

Responsibility: Police Department and City Attorney/Planner

Schedule for Monitoring, Evaluating and Updating Plan: Reviewed every year by the Chief of Police for possible necessary changes to comply with changes in City policies and conditions. It will be reviewed after significant disaster events in the interim by the Mayor, Chief of Police and where applicable other applicable department manager(s). Any required plan update will be adopted by resolution by the City Council.

Public Involvement Process for Plan Update: The City will advertise and hold a public hearing prior to the Council adopting the plan. The Emergency Manager/Police will be responsible for scheduling the meeting and publishing it in the Forks Forum. Revisions will occur following a public hearing before the City Council on the proposed revision and prior to the adoption of a resolution amending the plan.

2. City of Sequim

Responsibility: Director of Public Works and City Manager

Schedule for Monitoring, Evaluating and Updating Plan: Reviewed every year by City Manager, Planning Department, Public Works Department, Emergency Management Coordinator, IT and Finance, for possible necessary changes to comply with changes in city policies and conditions.

Public Involvement Process for Plan Update: Open meetings and City Council with notification in the Peninsula Daily News, Sequim Gazette, and City website.

3. City of Port Angeles

Responsibility: Fire Department Chief with backup from Planning Director, DCD

Schedule for Monitoring, Evaluating and Updating Plan: Progress of the Plan will be reviewed annually by a team of City department heads in a schedule to coincide with the City budget. The review meeting will be convened by the Fire Chief. The Plan will be updated in conjunction with the County update.

Public Involvement Process for Plan Update: The City will rely on input from public meeting(s) held by Clallam County, and through public input solicited from the public notification in the Peninsula Daily News prior to City Council adoption updates.

4. Clallam County -

Responsibility: Emergency Management Division, Department of Community Development and Department of Public Works.

Schedule for Monitoring, Evaluating and Updating Plan: After the revised Hazard Mitigation Plan is approved by Washington State EMD and accepted by FEMA, the Steering Committee has agreed to meet at least quarterly to discuss status of stated projects and possible new projects that have been identified.. Additionally, EMD as the lead agency will begin working with potential new partners that have indicated they would like to be included as partners in the new plan. All water districts and school districts will be contacted and encouraged to participate as full partners in the next iteration of the plan.

Public Involvement Process for Plan Update: The public will be involved in the period prior to the Plan update, by the following means:

- Inclusion of new partners will be announced in a formal press release to the legal paper of record. Individual partners will be encouraged to publish this advancement in their organization newsletters and give their constituents an opportunity to discuss proposed mitigation projects as they are explored.
- This plan has been developed through an inter-departmental Steering Committee. The committee will be a standing committee that will meet quarterly to monitor progress on the plan's implementation by stakeholders. The Steering Committee interim meetings will be convened by the Emergency Management Division.
- The Emergency Management Division will annually update a Hazard Mitigation section on the County website.

5. Olympic Medical Center

Responsibility: Disaster Committee reports to Environmental Care Committee

Schedule for Monitoring, Evaluating and Updating Plan: Annual review by the Disaster and Environment of Care Committee.

Public Involvement Process for Plan Update: The public involvement process will be conducted in conjunction with the public involvement led by the County in their update of the Clallam County Planning efforts.

6. Peninsula College

Responsibility: Emergency Management Coordinator and Vice President of Administrative Services

Schedule for Monitoring, Evaluating and Updating Plan: As part of the Master Plan, under ongoing review by Facilities Master Plan Committee.

Public Involvement Process for Plan Update: The FMP is reviewed by the Board of Trustees and all Board of Trustee meetings are advertised, public meetings.

7. Port of Port Angeles

Responsibility: Operations and Public Works Specialist

Schedule for Monitoring, Evaluating and Updating Plan: As part of the annual Comprehensive Scheme of Harbor Improvements revision process the Hazard Mitigation Plan will be evaluated and updated as necessary.

Public Involvement Process for Plan Update: All plan updates recommended via the annual review process shall be presented to and approved by the Port Commissioners during an advertised public meeting.

8. Public Utility District

Responsibility: Support Services and Safety Manager

Schedule for Monitoring, Evaluating and Updating Plan: The plan will be reviewed annually as part of the PUD budget process by all departments.

Public Involvement Process for Plan Update: Public input will be solicited via the PUD Newsletter and Website. The annual plan shall be presented and reviewed at a PUD Commissioner's meeting which is an advertised public meeting.

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APPENDICES

APPENDIX A - AGENDAS, MINUTES, PUBLIC NOTICES OF MEETINGS

AGENDA

Meeting: Hazard Mitigation Plan Kickoff Meeting
Date: July 1, 2009, 1:30 p.m.
Place: Emergency Operations Center

Welcome & Introductions Penny

“Active Participants” Who are they? Who’s missing?

Review Current Plan

Strengths
Weaknesses

Reports Completed Since 2004 to Include in Update:

- √ Architectural & Engineering Report for School District #121 – January 2008
- √ Wildfire Hazard Assessment and the Wildland-Urban Interface of the North Olympic Peninsula, WA – May 2009
- √

Update Strategies

Establish New Strategies

Meeting Schedule

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MINUTES FOR CLALLAM COUNTY HAZARD MITIGATION PLAN MEETING

July 1, 2009, 1:30 p.m.
Emergency Operations Center

Attending: Karen Blore, Cathy Lear, Penny Linterman, Bob Martin, Dan McKeen, John Miller, Ron Peregrin, Tom Shindler, Maris Turner, Jesse Waknitz, Jamye Wisecup

Next meeting: July 15, 2009, 1:30 – 3:30, HHS Conference Room, (basement)

Overview of the Plan:

The group received individual agency lists (extracted from the original plan) of the projects they had specified to be included in the 2004 plan. By the time of the next meeting, each agency will provide the current status of each of their items; whether or not it was completed, and, if not completed, what factors contributed to non-completion.

Cathy Lear distributed tables that were used in the previous plan that can be expanded in the update. They will be attached to the minutes.

Suggested Improvements for Plan Update:

- √ Most agencies felt that their scope was too narrow and that more projects should be listed even if a funding source was unknown; better to have a complete, comprehensive so we know exactly what we're working with
- √ Some critical agencies are absent from the first plan and need to be included in this update; here's the list and assignments to invite:
 - √ School districts – Penny to contact
 - √ Fire districts – Dan to contact
 - √ PUD – Penny to contact
 - √ Crescent Water District – Jamye to contact
 - √ Compile wish list of Special Purpose Districts to invite in the future.

Items Requested to be Added to the Updated Plan that presently exist:

- √ Dungeness River Comprehensive Flood Management Plan, 2009 draft – Cathy will supply
- √ Wildfire Hazard Assessment and the Wildland-Urban Interface of the North Olympic Peninsula, WA, completed May 2009 – in hand
- √ Port Angeles School District Study and Survey on Facilities completed by BLRB Architects, completed January 2008 – in hand
- √ Copies of new earthquake fault maps – Tom will supply
- √ Update critical facilities and review by group for completeness

Items Requested to be added to the Updated Plan that will have to be compiled:

- √ More robust hazard explanations
- √ More historical information on known hazard occurrences
- √ Higher resolution soils mapping (wish list) – assigned to Tom
- √ Lists of facilities that have suffered repetitive damage
- √ List of single damage event
- √ Known problem areas based upon identified hazard areas – assigned to Bob/Cathy
- √ Known structural engineering deficiencies under “old” codes – assigned to Bob
- √ Areas of new development that may be in hazard areas – assigned to Cathy/Bob
- √ Prepare map overlay of all critical facilities – assigned to Tom
- √ Comprehensive list of levees and dikes in the county with ownership, condition and location indicated.

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AGENDA

Meeting: Hazard Mitigation Plan Meeting
Date: July 15, 2009, 1:30 – 3:30 p.m.
Place: HHS Conference Room (across from EOC)

1. Review of minutes from previous meeting
2. Meeting Schedule – adjustments or changes? (attachment)
3. Review and Update of 2004 Planned Projects:

City of Forks – Penny will update
City of Sequim - Maris
City of Port Angeles - Dan
Clallam County – Cathy & Bob
Olympic Medical Center - Karen
Peninsula College - Stephanie
Port of Port Angeles – Jesse

Tasks for next meeting: refine updates and bring list of proposed additions to updated plan.

4. Review of plan pages I-1, I-2, I-3, I-4 (draft pages in email attachment)
5. Review of 2004 Clallam County Hazard Identification & Vulnerability Assessment (note: Technological Hazards and Hazard Matrix, Definitions and Acronyms are removed) (attachment)
6. Additions to agenda

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MINUTES FOR CLALLAM COUNTY HAZARD MITIGATION PLAN MEETING

July 15, 2009, 1:30 p.m.

Health and Human Services Conference Room

Attending: Karen Blore, Connie Beauvois, Penny Linterman, Bob Martin, Dan McKeen, Ron Peregrin, Tom Shindler, Stephanie Supko, Maris Turner, Jesse Waknitz, Mike Wolniewicz

Next meeting: July 29, 2009, 1:30 – 3:30, HHS Conference Room

MINUTES

Minutes from July 1 meeting were reviewed and approved without changes.

SCHEDULE

Group will continue to meet by-weekly until update is complete. Two meetings will be advertised by public notice to insure citizen participation. Draft copy will be available on-line by September 1.

PROJECT REVIEWS

All entities showed good progress and will have a final status report of current projects and a list of proposed additional projects to submit by July 29. A member from Crescent Water Association has joined and will be preparing projects to add to the next version.

Contact was made with PUD and they will be participating in the next iteration of the Hazard Mitigation Plan. Maris will contact Sequim School District and seek participation and Penny will contact the new superintendent of Port Angeles School District for participation as well.

PLAN REVIEW ASSIGNMENT

Participants are requested to review “strike and delete” draft of first four pages of existing plan as well as review Clallam County’s Hazard Identification and Vulnerability Assessment to consider if the hazard portions of that would be better information to include in the plan update than what is presently included.

In our present plan on page II-3 three hazards from the Washington State list were purposely left out for discussion. They were: avalanche, drought, and volcano. The committee discussed reversing this decision and including drought and volcano in the hazard list. While avalanches occur in our county, they are confined to areas within the Olympic National Park, during extreme weather conditions and are unlikely to impact anyone.

Participants are requested to provide comments, suggestions, additions and/or deletions by email or in person to be included in the update.

HIVA REVIEW

Participants are requested to review 2004 Clallam County Hazard Identification & Vulnerability Assessment for possible inclusion in update. Please to provide comments, suggestions, additions and/or deletions by email or in person to be included in the update.

Next meeting is July 29, 2009 @ 1:30 in the EOC.

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AGENDA

Meeting: Hazard Mitigation Plan Meeting
Date: July 29, 2009, 1:30 – 3:30 p.m.
Place: EOC

1. Review of minutes from previous meeting
2. Review and Update of 2004 Planned Projects:

City of Forks – *complete* / ready to review
City of Sequim – *pending* / review on August 12
City of Port Angeles – *pending* / review on August 12
Clallam County – Cathy & Bob
Olympic Medical Center - Karen
Peninsula College – *complete* / ready to review
Port of Port Angeles – *complete* / ready to review
Public Utility District – *pending* / review on August 26?
3. Comment and review of plan format and changes we want to incorporate
4. Review of Tables II-1, II-2, II-3, II-4 (attached)

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MINUTES FOR CLALLAM COUNTY HAZARD MITIGATION PLAN MEETING July 29, 2009, 1:30 p.m. Emergency Operations Center

Attending: Penny Linterman, Bob Martin, Maris Turner, Jesse Waknitz, Mike Wolniewicz

Next meeting: August 12, 2009, 1:30 – 3:30, EOC.

MINUTES

Minutes from July 15 meeting were reviewed and approved with adding the date that the plan will be available on-line of September 1.

FORMAT OF EXISTING PLAN

In Part II. Risk Assessment of the existing plan, each hazard is described, occurrences in our county are listed followed by a statement on the likelihood of recurrence. Each of these items is completely covered in Tables II-1, II-2, and II-3 which will be updated by adding two additional hazards not previously included (volcano and drought) and adding all the events that have occurred since completion of the first plan. In the end, most of the written portion of part II-2 will be deleted since it is well-covered in the tables.

PROJECT REVIEWS

The completed plan for *City of Forks* was reviewed and a couple of wording changes were suggested for Projects #1 and 2. Coincidentally Rod Fleck came by after the meeting and reviewed those changes, agreed and will submit revised language for those projects. They plan to submit some new projects for inclusion in the plan as well.

The completed plan for the *Port of Port Angeles* was reviewed and new language was suggested for Project #1 to make it consistent the other plans. Jesse will supply some new wording. Since the “new projects” are the same as the original ones, some reformatting will occur to make it clearer.

The completed plan for Peninsula College was reviewed and a slight change suggested for the wording in Project #2. Proposed change will be submitted to Stephanie for her approval.

By *August 7*, the remaining updates will be completed and submitted so that review of these organizations can occur on *August 12*:

- √ City of Sequim
- √ City of Port Angeles
- √ Clallam County
- √ Olympic Medical Center

PUD intends to join and will be present at the next meeting to participate. We’re still trying to involve Port Angeles and Sequim School Districts.

TABLE REVIEW

Tables II-1 to II-4 were reviewed and numerous suggestions were made. Revised tables will be distributed prior to the next meeting for review by all participants.

PROCEDURE TO ADD AN ORGANIZATION

The procedure to add an organization was reviewed and the term “community” is to be changed to “organization” throughout. It is attached with these minutes.

Next meeting is August 12, 2009 @ 1:30 in the HHS Conference Room.

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AGENDA

Meeting: Hazard Mitigation Plan Meeting
Date: August 12, 2009, 1:30 – 3:30 p.m.
Place: HHS Conference Room

1. Review of minutes from previous meeting
2. Review and Update of 2004 Planned Projects:

City of Sequim – *pending* / review on August 26
City of Port Angeles – ready to review on August 12
Public Utility District – ready to review on August 12

Clallam County – Cathy & Bob - ??
Olympic Medical Center – Karen _ ??
3. Update of agency table
4. Update of agency planned maintenance

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AGENDA

Meeting: Hazard Mitigation Plan Meeting
Date: September 9, 2009, 1:30 – 3:30 p.m.
Place: HHS Conference Room

1. Review and Update of 2004 Planned Projects:

City of Sequim – *pending*
Olympic Medical Center
2. Review of County-Wide Concerns – Part III
3. Review of plan Goals and Objectives – Part IV
4. Next steps: public meetings: September 22, September 28, website, what else?

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MINUTES FOR CLALLAM COUNTY HAZARD MITIGATION PLAN MEETING
September 9, 2009, 1:30 p.m.
Health and Human Services conference room

Attending: Ann Hall, Penny Linterman, Dan McKeen, John Miller, Tom Oblak, Tom Shindler, Maris Turner, Jesse Waknitz, Mike Wolniewicz

Next meeting: September 30, 2009, 1:30 – 3:30, EOC.

PROJECT REVIEWS

The completed projects for *City of Sequim* were reviewed and a couple of wording changes were suggested for the new projects. They had four projects in the 2004 plan and will update and continue one of those plus add six new projects.

Olympic Memorial Hospital has updated their four original projects and has just received a completed seismic study. After reviewing that recommendation, they plan to add some additional new projects to the plan.

With the addition of Sequim's new projects, the plan contains forty-six new projects. You can read the distribution of the projects on page 29 of the draft HMP.

Tom Shindler provided an updated list of critical facilities and after review by the committee and discussion, it was decided that the list has inaccuracies and isn't complete. There is a need to have a comprehensive list of all critical facilities within the county. Tom will provide the list to all partners, along with the eighteen definitions of what defines a "critical facility" and everyone will review their properties for completeness, add any missing ones, correct the incorrect data, and get everything back to Tom before September 30.

Members will also review Part II and Part IV and provide updates and/or changes to Penny by September 30. The Clallam County Board of Commissioners will look at the draft at Work Session on September 28 and the city council for Port Angeles will also review the draft in early October. Draft plan is on the website at:

http://www.clallam.net/EmergencyMgmt/assets/applets/Clallam_Hazard_Mitigation_FINAL_draft_2009.pdf

TABLE REVIEW – still not complete please review and finish by September 30.

Next meeting is September 30, 2009 @ 1:30 in the EOC.

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AGENDA

Meeting: Hazard Mitigation Plan Meeting
Date: September 30, 2009, 1:30 – 3:30 p.m.
Place: EOC

1. Table II-4 – Vulnerability Assessment – Tom Shindler
2. Review of County-Wide Concerns – Part III
3. Review of plan Goals and Objectives – Part IV
4. Review your projects on website document to be sure they're accurate.

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MINUTES FOR CLALLAM COUNTY HAZARD MITIGATION PLAN MEETING September 30, 2009, 1:30 p.m. EOC

Attending: Penny Linterman, John Miller, Tom Oblak, Tom Shindler

No quorum.

INFRASTRUCTURE/TABLE SUBMISSIONS:

Tom Shindler provided an updated list of critical facilities and after review by the committee and discussion, it was decided that the list has inaccuracies and isn't complete. There is a need to have a comprehensive list of all critical facilities within the county. Tom will provide the list to all partners, along with the eighteen definitions of what defines a "critical facility" and everyone will review their properties for completeness, add any missing ones, correct the incorrect data, and get everything back to Tom before September 30.

Tom reports that only two partners have completed the survey. He will not be able to complete the project without our input. Please get this information to him immediately. (email sent)

Still waiting on a Table II-2 update from Bob and Cathy. John Miller is shoring this up.

PUBLIC REVIEW OF PLAN:

The draft plan was shown to the Clallam County Board of Commissioners at Work Session on September 28 and received good comments. The question was raised does listing projects in the plan expose plan participants to liability. In checking with Bev O'Dea at WA State EMD she explained that it's no more of an exposure than listing projects in a transportation plan or maintenance plan. All agencies have listings for improvements, replacements, or upgrades to existing infrastructure as a matter of long-range planning goals. If agencies have a concern about this, they should have their legal counsel review the HMP projects.

The draft plan will be shown at Port Angeles City Council meeting on October 6, 2009 starting at 7 p.m. The meeting is open to the public.

PLEASE REVIEW YOUR PROJECTS ON THE WEBSITE FOR ACCURACY. You are responsible to be sure all information is correct for your agency and notify me of any changes needed.

http://www.clallam.net/EmergencyMgmt/assets/applets/Clallam_Hazard_Mitigation_FINAL_draft_2009.pdf

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AGENDA ITEM SUMMARY

(Must be submitted NLT 3PM Wednesday for next week agenda)

Department: Sheriff's Office, Dept of Emergency Mgmt

WORK SESSION [E Meeting Date: September 28, 2009

REGULAR AGENDA Meeting Date:

Required Originals Approved and Attached? M
Will Be Provided On:

Item Summary:*

EI Call for Hearing Resolution M Draft Ordinance Documents exempt from public disclosure attached: M
EI Contract/Agreement/MOU** EI Proclamation M Final Ordinance
Contract # M Budget Item
E Other informational only

Executive Summary:

In order to be eligible for grant funding from FEMA, counties must have an -approved Hazard Mitigation Plan and be in compliance with the Growth Management Act. Our first approved plan was prepared by consultants GeoEngineers, with grant funding of \$95K and was adopted in 2004. The current Hazard Mitigation Plan (HMP) will expire in January 2010.

Clallam County was unable to obtain grant funding to update our current HMP due to a missed deadline to apply for the grant. The County Administrator, the Director of Public Works, the Director of Community Development, the Director of Emergency Management and the previous plan participants, elected to direct staff time toward updating and completing the HMP ourselves and submitting it before our current plans expiration.

Budgetary Impact :(is there a monetary impact? If so, are funds for this already allocated or is a budget change necessary? If this is a contract and a budget change is necessary, the budget change form must be submitted with the item at work session and for the regular agenda) If a budget Action is required, has it been submitted and a copy attached? M

It is possible that there could be tremendous positive budgetary impact if we were to apply for grant funding for specific projects listed in the Hazard Mitigation Plan. Not only is the county eligible for funding but every plan participant is eligible to apply individually for funding for their listed projects. The overall impact to a rural community like ours could be substantial if this program is utilized as intended and managed for maximum submissions each year.

Millions of dollars are returned to FEMA each year from Washington State because projects are not submitted. This money could be claimed for improved utility infrastructure, retrofitting of existing facilities and mitigating potential damages that we could never afford to do with our existing tax base.

Recommended Action:(Does the Board need to act? If so, what is the department's recommendation?)

* Submit original and 5 copies
** Submit 3 originals and 5 copies

Questions? Call Trish Holden, Clerk of the Board, ext 2234

WS Agenda for 0928.doc
Revised: 5-9-05

None required; material is in draft form and subject to additional comments from plan partner and the public. The draft is posted on the website and

County Official Signature:

Date Submitted: 9/9/09

* Submit original and 5 copies Questions? Call Trish Holden, Clerk of the Board, ext
** Submit 3 originals and 5 copies **2234**

WS Agenda for 0928.doc
Revised: 5-9-05



WORK SESSION

BOARD OF CLALLAM COUNTY COMMISSIONERS

223 East 4th Street, Room 160
Port Angeles, Washington
September 28, 2009

Administration – 9 a.m.

- 1 Calendar/Correspondence
- 2 Request from Homeward Bound for loan of up to \$75,000 from HB2060 funds
- 3 Contract with K&H printers for services related to the November 3 general election (2b)*
- 4 Request for proposals for consulting services to develop a curriculum to train homeowners how to inspect their own septic systems

9:30 a.m.

- 5 Proposed update to the Hazard Mitigation Plan
- 6 Briefing on the results of a survey of the local vets in regard to proposed changes to County Code, Title 17, Dogs and Cats as relates to licensing (H2)*

Public Works – 10 a.m.

- 7 Pre-application questionnaire for grant from the Washington Department of Agriculture to upgrade public address system at the Fairgrounds

Community Development – 10:15 a.m.

- 8 Agreement with the Department of Licensing for public record information on vehicles and/or vessels for services related to junk vehicles (2c)*

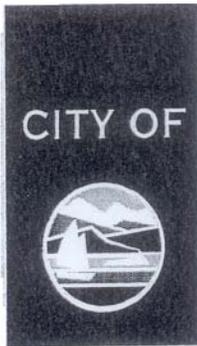
EXECUTIVE SESSION

The Board may recess into Executive Session to consider employment or dismissal of personnel, to review the

performance of a public employee, to consult with legal counsel, to consider the position to be taken in collective bargaining, to consider acquisition or sale of real estate, or other matters per RCW 42.30.110

Other items may be added at the discretion of the Board and additional Work Sessions may be scheduled if more time is needed to allow for adequate discussion.

Written testimony presented by members of the public during the Board meeting is considered a public document and must be submitted to the Clerk of the Board. Copies of public documents from Board meetings are available at the Commissioners' Office for \$0.15 per printed side.



PORT ANGELES

WASHINGTON, U. S. A.

CITY COUNCIL MEMO

October 6, 2009

CITY COUNCIL

FROM: Dan McKeen, Fire Chief
SUBJECT: Clallam County Hazard Mitigation Plan Updates

Summary: Federal legislation provides communities with access to grant funding for long-term hazard mitigation measures. The purpose of this grant funding is to provide resources for projects that will assist in reducing or eliminating the loss of life and/or property damage should a disaster occur. In order to be eligible for this grant funding, local governments must have a hazard mitigation plan in place.

The City of Port Angeles is part of a countywide hazard mitigation plan that expires in January 2010. This plan requires updating prior to its submission for re-adoption.

Recommendation: Open a public hearing on the proposed updates. No action required.

Background/Analysis: To reduce the burden on local communities following a disaster, federal legislation provides funding for community disaster relief and recovery. In addition, federal legislation also provides communities with limited grant funding following a disaster and during non-disaster years for long-term mitigation measures. The purpose of hazard mitigation grant funding is to provide resources for projects prior to a disaster that will assist in reducing or eliminating the loss of life and/or property damage should another disaster occur.

To improve the hazard mitigation planning process, the federal government requires that local governments applying for grant funding have in place an approved local Hazard Mitigation Plan. The local Hazard Mitigation Plan represents a local covenant commitment to reduce risks from natural hazards and serves as a guide for decision makers as they commit resources to reduce any effects of natural hazards. The local Hazard Mitigation Plan also serves as the basis for local jurisdiction mitigation project funding.

The City of Port Angeles, along with other jurisdictions, is part of a countywide Hazard Mitigation Plan. This plan was adopted in 2004 and expires in January 2010. Prior to re-adoption, the plan requires that each jurisdiction provide a thorough review and update as needed.

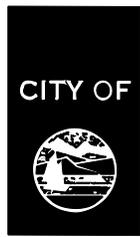
To assist in the review, City staff used the following goals identified **in** the current Clallam County Hazard Mitigation Plan:

1. Maintain transportation routes across the County, during and after key hazard events
2. Maintain the reliability of utilities or have emergency utility plans in place during and after key hazard events.
Maintain emergency services capability during a key hazard event, including keeping communications channels open.
4. Minimize damage and reduce repetitive losses from key hazard events such as flooding, landslide and seismic related.
5. Reduce vulnerability to fires.

Staff updated the current City of Port Angeles mitigation projects within the plan and also provided new City projects. A listing of the proposed projects - existing and new - is attached.

The Fire Department would like to acknowledge the support of the -Public Works & Utilities Department, the Community & Economic Development Department and County Emergency Management for their assistance with the plan updates.

Attachment@ City of Port Angeles Hazard Mitigation Project List



CITY OF "PORTANGELES

WASHINGTON, U.S.A.

AGENDA CITY COUNCIL MEETING

321 East 5th Street

October 6, 2009

SPECIAL MEETING - 4:30 p.m.

REGULAR MEETING 6:00 p.m.

SPECIAL MEETING - PORT ANGELES HARBOR-WORKS BOARD POSITION INTERVIEWS - 4:30 p.m.
Conduct Interviews, may adjourn Executive Session as per RCW 42.30.110(1)(g), to evaluate qualifications. It is expected that Council will proceed to make an appointment during the regular meeting that will follow at 6:00 p.m.

Note: The Mayor may determine the order of business for a particular City Council meeting. The agenda should be arranged to best serve the needs and/or convenience of the Council and the public. The items of business for regular Council meetings may include the following.-

A. CALL TO ORDER - REGULAR MEETING AT 6:00

P.M.

B. ROLL CALL

PLEDGE OF ALLEGIANCE

**PUBLIC CEREMONIES/PRESENTATIONS &
EMPLOYEE RECOGNITIONS**

1. Domestic Violence Awareness Month Proclamation

B-

1. Present to Becca Korby, Executive Director of Healthy Families

2 National Parks Service Presentation

2. Presentation by Olympic National Park Superintendent, Karen Gustin / Information Only

PUBLIC COMMENT. This is an opportunity for members of the public to speak to the City Council. To allow time for the Council to complete its legislative agenda, comments should be limited to no more than 5 minutes per person and a total of 15 minutes for this comment period. At the discretion of the Mayor, these time periods may be lengthened or shortened. Following any public comment, the Mayor may allow time, limited to five minutes, for response from City Council members and/or City Staff

C. CITY COUNCIL COMMITTEE

REPORTS

D. WORK SESSION

2010 Preliminary Budget - Draft

Continue to October 7 at 5:30 p.m

E. LATE ITEMS TO BE PLACED ON THIS OR FUTURE AGENDAS as determined by City Manager or Council member

F. ORDINANCES NOT REQUIRING PUBLIC HEARINGS

G. RESOLUTIONS

1. Finding of Substantial Need for 2010 Property Tax Levy

G-1

Pass Resolution

PUBLIC HEARINGS

Public hearings are set by the City Council in order to meet legal requirements. In addition, the City Council may set a public hearing in order to receive public input prior to making decisions which impact the citizens. Certain matters may be controversial, and the City Council may choose to seek public opinion through the public hearing process.

**NOTE: HEARING DEVICES AVAILABLE FOR THOSE NEEDING ASSISTANCE
MAYOR TO DETERMINE TIME OF BREAK**

October 6, 2009

Port Angeles City Council Meeting

Page - I

H. OTHER CONSIDERATIONS

- 1. Harbor-Works Board Appointment
- 2. Transmission Agmt. - Morse Creek Hydroelectric Project

H-1 1. Make
H- Appointment 2.
26 Approve

I. QUASI-JUDICIAL MATTERS NOT REQUIRING PUBLIC HEARINGS

- 1. Maloney Heights
- 2. Laurel Street Subdivisions

1-1 1. Approve
 1-65 2. Approve

J. PUBLIC HEARINGS - OTHER I

(**TM H.M. or soon thereafter**)

- 1. Lucero Street Vacation

j- 1. Conduct Public Hearing; Close Public Hearing;
 Approve
 j@VM%@ 2. Conduct Public Hearing; No action requested
J-26 3. Presentation, Open Public Hearing, I"
 Reading of Ordinance; Continue to October 20..

2@ Clallam County Hazard Mitigation Plan
 3. Utility Rate & Fee Adjustments

K. FMANCE

- 1. Electric Distribution System Protection Contract CL 0 1 - 2007
- 2. William Shore Memorial Pool District Contract Extension
- 3. Consultant Agreement for Electric Distribution Line Reconstruction, CL 06-2007
- 4. Amendment No. 2 to Consultant Agreement with Perteet for FEMA Disaster Events 1817-DR-WA and 1825-DR-WA

K- 1. Award
 1 2. Approve
 K- Extension 3.
 2 Approve
 K-5 4. Approve
 4

L. CONSENT AGENDA

- 1. City Council Regular Meeting Minutes of Sept. 15, 2009.
- 2. Expenditure Approval List from 9/5/09 to 9/25/2009 for \$2,491,976.13.
- 3. Public Display of Fireworks Permit - Port Angeles High School Homecoming Game
- 4. Acceptance of NPDES Phase 11 Stormwater Pass-through Grant
- 5. Public Safety Advisory Board Appointment
- 6. PenCom Radio Equipment Expansion - Upgrade
- 7. Cronauer Street Vacation / Set Public Hearing
- 8. Peninsula College Street Vacation / Set Public Hearing

L- **Accept Consent**
 1 **Agenda**
 L-
16-40

L-42

L-
 43
 L-
 44

M. INFORMATION

- City Manager Reports:
- 1. Planning Commission Minutes - August 26, 2009
 - 2. Construction Status Report
 - 3. Grants & Loans Status Report
 - 4. Quarterly Consultant Report
 - 5. Parks & Recreation Beautification Com. - June Minutes

L-
 45
J-50
 M-7
 M-9
 M-10
 M-11
 M-15

N. EXECUTIVE SESSION - Review performance of a public employee as per RCW 42.30.110(g).

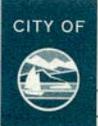
O. ADJOURNMENT - Continue meeting to October 7, 2009 at 5:30 p.m.

**NOTE: HEARING DEVICES AVAILABLE FOR THOSE NEEDING ASSISTANCE
 MAYOR TO DETERMINE TIME OF BREAK**

**Affidavit of
Publication**
in the Superior Court of the State of Washington for Clallam/Jefferson
County

Peninsula Daily News

CITY OF PORT ANGELES
LEGAL ACCT/CITY CLERK
PO BOX 11 50
PORT ANGELES, WA 98362-0217



CITY OF PORT ANGELES
WASHINGTON, U. S. A.
Fire Department

Daniel K. McKeen
Fire Chief

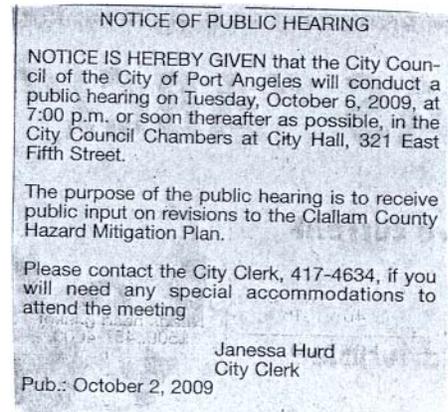
Phone. 360-417-4651
Email: dmckeen@cityofpa-us

Website: www.cityofpa.us
102 East Fifth Street

Fax., 360-417-4659
TTY. 360-417-4645
Port Angeles, WA 98362-0314

Reference : 4900481
5058093 NOTICE OF PUBLIC
HEARING

The undersigned being first duly sworn on oath, deposes and says.
That she/he is authorized to and does make this affidavit for and on behalf of Peninsula Daily News, a corporation, and that the following statements of fact are within her/his personal and actual knowledge.
That said corporation is the owner and publisher of the Peninsula Daily News published in Clallam/Jefferson Counties, and had been approved as a legal newspaper by order of the Superior Court of said Clallam/Jefferson County of the State Of Washington.
That the annexed is a true copy of a legal insertion as it was published in regular issues (and not in the supplement form) of said newspaper was regularly distributed to its subscribers during all of said period. The publishing date cited is the last day of publication.



1 Insertion in **Pub PDN** on **10/02/09**

Notary Public in and for the State of Washington residing in Port Angeles. Peninsula Daily News P.O. Box 1330 Port Angeles, WA 98362

----- Sworn to me on this 2nd day
of October 2009

AFOTARY PUBLIC

COMMENTS RECEIVED

Email received from Darlene Schanfald on October 8, 2009:

Subject: comments on hazard mitigation plan

Penny:

This effort is positive and proactive.

I'll comment on #5 and #10 of 2010 of 32 (as read on the City of PA website).

How would the county (and whoever else) "stabilize bluffs?" Details were not provided. Hard armoring and erecting walls along the beach/shoreline is counter to restoring and protecting our shorelines and habitats, as mandated by the Puget Sound Partnership Initiative. What methods does the county intend?

Methods that help nourish and restore our shorelines should be used.

If there are more details I could review for these two subjects, kindly let me know where to access them.

Thank you, Darlene Schanfald
Project Coordinator, Rayonier Hazardous Waste Cleanup Project Environmental Council Coalition
PO Box 2664 Sequim, WA 98382
360-681-7565 darlenes@olympus.net

Reply:

Hi Darlene,

The hazard mitigation plan briefly identifies the hazards to be mitigated but not the methods used to mitigate them. As projects are selected and planned by each partner, they would be discussed at council meetings or board meetings and a course plotted. The county is beginning a complete overhaul of its old shoreline master plan and Steve grey is developing a strategy for public participation. I've attached an article describing his efforts and also listing his email so you can contact him.

Additionally, I'm forwarding your comments to Dan McKeen who is coordinating the City of Port Angeles' portion of the Hazard Mitigation Plan.

Penny

Thanks, Penny. I look forward to participating in development of both the county and city hmp. ds

APPENDIX B – ACRONYMS & REFERENCES

Acronym	Definition
BAS	best available science
BIA	Bureau of Indian Affairs
BOCC	Board of County Commissioners
CDBG	Community Development Block Grant
CIP	Capital Improvement Program
Cfs	cubic foot per second
CRAB	County Road Advisory Board
DCD	Department of Community Development
DHS	U.S. Department of Homeland Security
DMA	Disaster Mitigation Act
DNR	Washington State Department of Natural Resources
DOE	Washington State Department of Ecology
DRI	Desert Research Institute
EDA	Economic Development Administration
EMD	Clallam County Emergency Management Division
EMD	State of Washington Emergency Management Division
FAA	Federal Aviation Administrator
FCAAP	Flood Control Assistance Account Program
FEMA	Federal Emergency Management Act
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rating Maps
GIS	Geographic Information Systems
GMA	Growth Management Act
HIVA	Hazard Inventory and Vulnerability Analysis
HMGP	Hazard Mitigation Grants Program
HUD	U.S. Department of Housing and Urban Development
ICDBG	Indian Community Development Block Grant
NFIP	National Flood Insurance Program
OMB	Office of Management and Budget
OPS-CAN	Olympic Peninsula Safety Communications Alliance Network
REET	Real Estate Excise Tax
SR	State Route
SRFB	Salmon Recovery Funding Board
TIP	Transportation Improvement Plan
UGAs	Urban Growth Areas
USGS	U.S. Geological Survey
WDFW	Washington State Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

APPENDIX B – continued

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**APPENDIX C -
TABLES AND ILLUSTRATIONS**

Description of Key Hazards.....Table II-1

Hazard Identification and AssessmentTable II-2

Previous DamagesTable II-3

WSDOT Structurally Deficient Bridge List, June 2008 129

Newspaper Articles

**Table II-1
Description of Key Hazards**

Hazard	Description of Hazard	How Identified	Why Identified
Drought	Drought is a condition of climatic dryness that causes a reduction in soil moisture and water below the threshold necessary to sustain plant, human and animal life.	The National Drought Mitigation Center at the University of Nebraska-Lincoln uses three categories to describe likely drought impacts: 1. Agricultural-drought threatens crops that rely on natural precipitation; 2. Water supply-drought threatens supplies of water for irrigated crops and for communities; 3. Fire hazard-drought increases the threat of wildfires from dry conditions in the forest and rangeland.	On average, the nationwide annual impact of drought is greater than the impacts of any other hazard. Reduced replenishment of groundwater affects streams. Reduced groundwater levels mean that even less water will enter streams when stream flow is lowest.
Landslide and Erosion	Landslide: Down slope movement of soil, rock and organic materials under influence of gravity. Landslides typically occur on slopes > 40%. Erosion: loss of soil or sediment from weathering processes. Erosion more likely to occur in prone soil and on slopes greater than 15%.	Review of County GIS landslide and erosion hazard layers (generated by County). Review of past disaster declarations for landslides. Review of previous FEMA claims. Review of newspaper articles.	County has considerable topographic relief. Landslides have caused repeated damage on U.S. Highway 101 and State Highway 112, which are critical transportation routes. Damage often related to high precipitation events.
Riverine and Coastal Processes	Inundation of dry land by rivers, streams from high water levels or inundation of dry land by large lakes or ocean from winds or barometric tide floods. Also erosion by channel migration.	Review of County GIS flood hazard layer (generated from FIRMSs). Review of past disaster declarations. Review of previous FEMA claims. Review of newspaper articles.	Numerous streams and rivers in County. West and north margins of County are coastal. Associated with winter storms. Most declarations in Clallam County from flooding.
Tsunami	A tsunami is a series of destructive waves affecting shorelines.	Tsunamis are usually generated by earthquakes but may also be caused by underwater landslides or underwater volcanic eruptions.	We have one hundred seventy miles of coastline in our county that is vulnerable to inundation during an event.

Table II-1 - cont'd

Seismic-related	Earthquakes from Cascadia Subduction Zone of the Juan de Fuca (intraplate) and shallow crustal faults would cause ground movement through the county. Some areas are subject to liquefaction. Tsunamis are sea waves of extremely long length and force generated by a seismic disturbance or landslide on or below the ocean floor.	Review of County/State GIS seismic and tsunami hazard layers. Review of past disaster declaration for Nisqually Earthquake. Review of historical data.	County has numerous mapped faults and is proximal to the Cascadia Subduction Zone. Low-lying coastal areas and sea walls are vulnerable to tsunamis. Much of the downtown Port Angeles is constructed on fill soil, which is potentially liquefiable.
Severe Storms	Storms that occur from November to March, characterized by strong winds, tornadoes, rain, snow, or other precipitation and may be accompanied by thunder or lightning.	Review of past disaster declarations for storms. Review of FEMA claims. Review of newspaper articles.	Vulnerability to severe storms effect transportation and utilities. Access across the County via Highways 101 and 112 is unpredictable as roads are vulnerable to damage from severe storms and landslide/erosion. Severe storms also cause flooding and channel migration.
Urban/Wildland Fire	Wildland fires are the uncontrolled destruction of forests, brush, field crops and grasslands caused by nature or humans. Urban fires may start at the wildland/urban interface from a wildland fire, or start from human causes within the urban area.	Uncontrolled destruction of forests, brush, field crops, grasslands and real and personal property.	Much of the County is occupied by Olympic National Park and Olympic National Forest. 40% of population lives in incorporated and the remaining 60% live in unincorporated areas. Wildland fires may encroach on the three UGAs in the County, causing urban fires. Old structures in UGAs are vulnerable to urban fires.
Volcano	A volcano is a vent in the earth's crust through which magma (molten rock), rock fragments, gases, and ashes are ejected from the earth's interior. A volcanic mountain is created over time by the accumulation of these erupted products on the earth's surface.	When Cascade volcanoes do erupt, high-speed avalanches of hot ash and rock called pyroclastic flows can devastate areas 10 or more miles away. When it becomes a huge mudflow of ash and debris called a lahar, it can damage areas up to 50 miles away.	Falling ash from explosive eruptions can disrupt human activities hundreds of miles downwind, and drifting clouds of fine ash can cause severe damage to the engines of jet aircraft hundreds or thousands of miles away.

**Table II-2
HAZARD IDENTIFICATION
ASSESSMENT**

Hazard Type	Disaster History (with Federal Disaster No., if any)	Likelihood of Occurrence – Probability (L, M, H)	Location of Assets (i.e. small, medium or large, size of impacted area) - Correspond to map or identifiable area - especially critical facilities and infrastructure	Impact Potential (L, M, H)	Hazard Strength Index (rank by combining how much impact and how frequently this hazard affects your community) - Vulnerability
Drought	September 2006 (M#06-02585); on September 11, 2006 Governor Gregoire proclaimed a Declaration of Drought for regions 19 and 20; summer of 2009 had two 'red flag warning' for extreme fire danger.	M	Lower than normal rainfall and larger than usual tourist counts combined to produce a critical water shortage. A desalination unit from the Navy was set up to cover the shortage until well improvements could be made providing a permanent solution.	H	M
Landslide and Erosion	December 1979 (DR-612) mudslides, January 1986 (DR-757), December 1996-January 1997 (DR-1159), March 1997 (DR-1172), February 2007 (DR-1682) landslides, mudslides, January 2009 (DR-1817) landslides, mudslides.	H	Steep slopes and soil types identify landslide and erosion hazard areas (Figures 4 and 5). U.S. Route 101 and State Route 112 are the main transportation corridors through the county and have been impacted in the past by land sliding resulting from heavy rain. Parts of Highway 112 are undercut and fail because of wave action. Twelve WSDOT bridges and one Port Angeles pump station are located with the Clallam County's Landslide Hazard Zone. A Port Angeles reservoir, wastewater pump and private school are within the Clallam County's Erosion Hazard Zone.	M	H
Riverine and Coastal Processes (flooding)	December 1979 (DR-612), January 1986 (DR-757), November 1990 (DR-883), November-December 1995 (DR-1079), December 1996-January 1997 (DR-1159), March 1997 (DR-1172), November 2003 (DR-1499), Flooding) December 2007 (DR-1734).	H	Major Rivers (Bogachiel, Dickey, SolDuc, Calawah, Quillayute, Sekiu, Hoko, Clallam, Elwha, Morse and Dungeness) are mapped with FEMA 100-year floodplains (see Figure 3). Ediz Hook and parts of Port Angeles, and the Gibbon and Travis spits (mouth of Sequim Bay) may become inundated by high tides and storm surges. Much of the Clallam, Elwha and Dungeness tidal areas may be impacted by high tides as well as river flooding. Highway 110 along the Bogachiel River becomes inundated as the river approaches flood stage. Twenty-nine WSDOT bridges are located within the FEMA 100-year flood zone.	M	H

**Table II-2
HAZARD IDENTIFICATION
ASSESSMENT – cont'd**

Hazard Type	Disaster History (with Federal Disaster No., if any)	Likelihood of Occurrence - Probability (L, M, H)	Location of Assets (i.e. small, medium or large, size of impacted area) - Correspond to map or identifiable area - especially critical facilities and infrastructure	Impact Potential (L, M, H)	Hazard Strength Index (rank by combining how much impact and how frequently this hazard affects your community) - Vulnerability
Riverine Processes (Channel Migration)	December 1979 (DR-612), January 1986 (DR-757), November 1990 (DR-883), November-December 1995 (DR-1079), December 1996-January 1997 (DR-1159), March 1997 (DR-1172), November 2003 (DR-1499).	M	Rivers adjacent to Clallam County rivers are susceptible to channel migration (see Figure 3). Channel migration affects bridges and homes along the Bogachiel, SolDuc, Clallam, Big, Elwha and Dungeness Rivers. Eight WSDOT bridges are located within Clallam County's Meander Hazards Zone. Highways 101 and 110 along the Bogachiel River and 112 over the Hoko River may be threatened by channel migration. A main water source for the City of Port Angeles is located within the Elwha River Channel Migration Hazard Zone. Critical facilities relative to hazard areas are shown on Figures 10a-10d. Current climate change models predict that winter precipitation may fall as rain rather than as snow. An increase in rainfall could affect how often and how severely Clallam County rivers flood.	M	M
Seismic-related	1700 mag 9.0 Cascadia Subduction Zone, 1909 mag 6.0; 1936 mag 6.1; 1939 mag 6.1; 1939 mag 6.2; 1949 mag 7.1; 1965 m 6.5; 2001 mag 6.8 Nisqually Earthquake (DR-1361).	L	Entire County is susceptible to strong ground motions from various seismic sources. A Cascadia Subduction Zone earthquake is imminent. Many small near faults could cause damage in localized areas. Alluvial (river) and beach deposits along the multiple rivers and coastline are potentially susceptible to liquefaction, settlement and lateral spreading (Figure 6). Damages to concrete plant in 1946. Port Angeles' historical downtown area and wastewater pump are located within Clallam County's Seismic Hazard Zone. Buried utilities, such as water, sewer and natural gas may be impacted where located in the mapped Seismic Hazard Zone. In the	H	M

**Table II-2
HAZARD IDENTIFICATION
ASSESSMENT – cont'd**

Hazard Type	Disaster History (with Federal Disaster No., if any)	Likelihood of Occurrence - Probability (L, M, H)	Location of Assets (i.e. small, medium or large, size of impacted area) - Correspond to map or identifiable area - especially critical facilities and infrastructure	Impact Potential (L, M, H)	Hazard Strength Index (rank by combining how much impact and how frequently this hazard affects your community) - Vulnerability
			County, five WSDOT bridges are located in the Clallam County's Seismic Hazard Zone.		
Severe Storms	December 1979 (DR-612), January 1986 (DR-757), November 1990 (DR-883), August 1994 (DR-1037) November-December 1995 (DR-1079), December 1996-January 1997 (DR-1159), March 1997 (DR-1172), January-February 2006 (DR-1641), December 2006 (DR-1682), December 2007 (DR-1734), December 2008-January 2009 (DR-1825), January 2009 (DR-1817).	H	Clallam County is threatened annually by regional winter storms. The storms include heavy rain, and strong winds, with considerable snowfall and snowdrifts along Highway 101 near Lake Crescent.	M	M
Tsunami	900 – 930 era, 1700, the 1890's 1944 – 1953 era, 1949, 1960, 1964, and 1980.	L			
Urban/Wildland Fire	1668-1701 1M+ acres, 1907 Sol Duc Valley 12+ acres, 1951, 1955, 2002, 2003 Miller Peninsula 20 acres	L	Private homes are built close to the Olympic National Park, US Forest Service and State lands. Wildland fires can affect transportation routes.	M	M
Volcano	May 1980 (DR-623)	L	Many areas in the county received ash fall from a dusting to a depth of several inches.	H	M
PROBABILITY RATING DEFINED: H = happening frequently or within every 5 years; M = less frequent within 6 to 25 years, L = infrequently within 26+ years		IMPACT POTENTIAL RATING DEFINED: Number of people effected: 0-5 = L, 6-50 = M, >50 = H			

Table II-3 Previous Damages – Hazard Mitigation Plan – Clallam County, WA

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
1951	Wildland Fire	Forks area		
1979 Disaster #612	Flood, Severe Storm and Landslide	SR 112 near Deep Creek	Landslide	
		Hoko Road (6 miles toward Ozette from SR 112)	Washout	\$3,630
		Woodcock Road		\$9,275
		Ennis Creek		\$11,895
		Bear Creek		\$16,206
		US Hwy 101 at Bogachiel River	Approach to bridge destroyed and one fatality	
		Private Residences in Clallam County	Flooding	est. \$349,000
1980 Disaster #623 Mt. St. Helens' eruption	Volcano	All 39 counties		
1981-1986	Flood	Dungeness Dike and River	Dike and river maintenance by Dungeness Meadows Dike Committee	\$75,000
1986 Disaster #757 Severe storms/flooding	Flood	Dungeness Dike and roads	Repair by County	\$14,800
1990 - Disaster #883	Flood and Severe Storm	Clallam County Public Assistance Program Eligible Damages		\$298,550
		Ward Road (near intersection with Lotsgesell Road)	Dungeness River changes direction & eroded left bank upstream of pre-existing heavy riprap levee	
		Hoko-Ozette Road (1.1 miles from SR 112 AND beginning at SR 112 westerly of Sekiu, thence southerly from MP 1.6 to MP 4.9)	Slide debris removal	
		Erickson Road (near intersection with La Push Road at Bogachiel River)	Washouts along Bogachiel River	
		Crescent Beach Road	Roadway threatened by severe erosion by waves and tides	
		Sekiu River Road (980 feet south of SR 112)	Heavy stream flow washed out roadway and corrugated metal pipes	
		Solduc Valley Road and Clark Road	Flooding	
		Undi Road (near US Hwy 101)	Bogachiel River washed out	
		Frontier Street (0.3 mile east of main intersection in Clallam Bay)	Clallam Bay Slough is affected by tidal action and waves	

Table II-3 Previous Damages – Hazard Mitigation Plan – Clallam County, WA – cont'd

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
		Clallam Bay Waste Water Treatment Plant 0.4 mile east of SR 112 on Frontier Road in Clallam Bay to 2 miles west of Front Street	Power Outage	
		La Push Road (beginning at Bogachiel River Bridge, thence northerly 0.7 mile)	Bogachiel River overflowed its banks	
		Camp David Park (west end of Lake Crescent, 1.5 miles on Forest Service Road)	High winds created high waves that eroded a constructed and maintained sand beach	
		Port Williams Park (launching ramp, 2.8 miles east of intersection with Sequim-Dungeness Way)		
		Mora Road	SolDuc Bridge	
		Woodcock Rd	Ward Bridge	
		Haller Dam	Failed	
		City of Port Angeles Public Assistance Program Eligible Damages		\$122,409
		City of Sequim Public Assistance Program Eligible Damages		\$122,405
		Port of Port Angeles Public Assistance Program Eligible Damages		\$100,000
1994 Disaster #1037	El Nino - salmon	Affected 6 western counties		
1994	Landslide	SR 112 (MP 4)	WSDOT reports	
1995 - Disaster #1079	Flood and Severe Storm	Clallam County Public Assistance Program Eligible Damages		\$29,054
		City of Port Angeles Public Assistance Program Eligible Damages		\$113,303
		Port of Port Angeles Public Assistance Program Eligible Damages	Port of Port Angeles Harbor Armor Rock Wind Damage	\$285,877
		Private Residences in Clallam County		est. \$67,690
Ongoing prior to 1995		Ward Bridge (near Dungeness River)	Bank stabilization	\$13,000
1996/1997 Disaster #1159	Flood and Severe Storm	City of Port Angeles Public Assistance Program Eligible Damages	Slide cleanup, roadway damage, damage to parks	\$337,187
		City of Sequim Public Assistance Program Eligible Damages		\$41,977
		Port of Port Angeles Public Assistance Program Eligible Damages		\$182,965

Table II-3 Previous Damages – Hazard Mitigation Plan – Clallam County, WA – cont'd

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
		Clallam County Public Assistance Program Eligible Damages		\$348,088
		South Shore Road (1 mile west of US Hwy 101)	Landslide	
		Cays Road	Erosion and road embankment washout	
		Old Blyn Highway (near US Hwy 101 and Jimmiecomelately Creek)	Road and pier protection washout	
		Zaccardo Road	Road and culvert washout	
		Olsen Road	Culvert, shoulder and ditch washout	
		Bugge Road	Culvert and road embankment washed away	
		Young Quist Road at Palo Alto Road	Roadway and culvert washed out	
		Sturdevant Road	Damage to 4 culverts and shoulder	
		Panorama Vista Park	Stairway washed away and destroyed	
		Lost Mountain Road	Roadbed damage/repair	
		Discovery View Drive (MP 0.3 +/-)	Roadway embankment washout	
		Don Schmitt Road	Plugged culverts	
		Happy Valley Road	Culvert and County road damaged by water	
		Clallam County Fairground	Rain and melted snow accumulated on fairgrounds	
		Chicken Coop Road (MP 1.34 - 2.9 - 3.0)	Floodwaters damaged road shoulders, ditches and culverts	
		Louella Road	Floodwater damaged roadway and culvert	
		Pierson Road (100 to 600 feet south of US Hwy 101)	Road, ditch and culvert repair	
		Fish Hatchery Road (MP 3 to MP 2.47)	Road damage caused by flood waters	
		May Road (MP 0 to 0.3)	Floodwater washed ditch full and destroyed the road surface	
		Corriea Road (Intersection US Hwy 101)	Floodwaters washed out roadway and culvert	
		Blyn Road	Road washed out at culvert	
		Private Residences in Clallam County		est. \$358,743
		Damage to private sector in City of Port Angeles (from City of Port Angeles)	Boathouse collapse, damages to residences and outbuildings	est \$802,724
		Jamestown S'Klallam Tribe	Stormwater damage	\$36,368
1997 - Disaster #1172	Flood/Landslide	Private Residences in Clallam County		\$19,025
1998	Urban Fire	Port Angeles		\$2,405,235
1999	Urban Fire	Port Angeles		\$647,845

Table II-3 Previous Damages – Hazard Mitigation Plan – Clallam County, WA – cont'd

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
2000	Urban Fire	Port Angeles		\$456,058
2001 - Disaster #1361	Nisqually Earthquake	City of Port Angeles Public Assistance Program Eligible Damages		\$60,708
		Port of Port Angeles Public Assistance Program Eligible Damages	Landing Mall and Port Administration Building	\$6,576
		Private Residences in Clallam County		est. \$155,719
		Peninsula College (J and N Buildings)		\$65,000
2001	Urban Fire	Port Angeles		\$886,230
2002	Urban Fire	Port Angeles		\$1,064,070
2003 (YTD)	Urban Fire	Port Angeles		\$110,500
2003 - Disaster #1499	Flood and Severe Storm	Federal Highway Administration Emergency Relief Funding		est. \$77,050
		17700 Nichols	Erosion of riverbank near bridge	
		94120 Old Olympic Highway	Erosion of riverbank upstream from south bridge abutment	
		94160 Hoko-Ozette Road	Landslide buried culvert	
		11200 Quillayute Road	Shoulder slide out	
		10440 Old LaPush Road	Remove slide materials from ditch and road, and repave	
		46110 Ward Road	Sandbagging to prevent flooding at Ward Road	
		54070 Schmuck Road	Repaired sinkhole in road	
		15570 West Lake Pleasant Road	Bedload of stream plugged two culverts, ditches, covered rd	
		15620 Tye Ridge Road	Bedload of stream plugged culvert, ditches and covered road	
		11950 Fuhrman Road	Diverted flood waters from dahlia farm by opening up road drainage way	
		Undi Road	Along Bogachiel River	est. \$35,000
		Clallam Bay Footbridge	Will be relocated	est. \$50,000
		Clallam County Public Assistance Program Eligible Damages	Protective Measures (5), road systems (9), public utilities (1)	\$84,868.00
			Parks/other	est. \$25,000
Repetitive	Flood	Dungeness River (particularly River's End and Kinkade Island)		
	Flood	Bogachiel River (SR 110 crossing)		

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
	Landslide	Bluffs along Marine Drive in Port Angeles	This includes a fatality that occurred in 1998 when the bluff slid and crushed a tavern	
	Flood	Place Road on the Elwha		
	Landslide	Anderson Road/Marine View Drive		
	Flood	3 Crabs Road near Sequim		
	Flood	Hoko Road		
	Landslide/Washout	SR 112 in numerous places, including Jim Creek (MP 32) and MP 36		
	Washout	Pysht Road at SR 113		
	Bluff Erosion	Diamond Point and Bluffs subdivisions east of Port Angeles		
	Bluff Erosion	Clallam Bay-Sekiu		
1995 - 2001	Flood or Landslide	Bogachiel Slide	WSDOT Funded Repair Project	\$7,000
		SR 112 Projects	WSDOT Funded Repair Project	\$4,728,000
		Debris Flow		
		Jim Creek Slide		
		Susie Creek Slide		
		US Hwy 101 Lake Crescent Projects	WSDOT Funded Repair Project	\$2,591,000
		Lake Crescent Vicinity		
		MP 231 Vicinity Slide		
		Govan Falls Slide Repair		
2006 - DR-1641	Severe Winter Storms			
2007 - DR-1682	Severe Winter Storms, wind, landslides, mudslides			
2007 - DR-1734	Severe storms and flooding	Frontier Street Bridge - sewer main damage	Flooding from Clallam River damaged 12" dia sewer line.	\$42,734
		Mt. Octopus - southwest of Forks	Crossband repeater damaged during storm	\$30,000
		Debris removal		\$21,159
		Ward Road MP 1.2	Road shoulder damage	\$11,587

Table II-3 Previous Damages – Hazard Mitigation Plan – Clallam County, WA – cont'd

Year	Hazard Type	Location	Damage Details	Damage or Claim Amount
2009 - DR-1817	Severe winter storm, landslides, mudslides, and flooding	Wisem Creek Road	Repair washout	\$5,622
		Forks snow removal	Record snowfall	\$4,193
		Russell Road	flooded	\$400,000
		Quileute Structure		\$63,000
		Sequim snow removal	Record snowfall	\$7,000
		Port Angeles snow removal	Record snowfall	\$55,000
		City of Port Angeles	Damage to truck during event	\$1,000
		Discovery Trail damage	Snow damage	\$140,000
		Discovery Trail damage	debris removal	\$16,300
		Tumwater Street		\$150,000
		Channel Valley St.	drainage damage	\$5,000
		Squad car	damaged during event	\$3,082
		PENCOM	OT	\$998
		Nicholas Bridge	temporary structure	\$245,000
		Nicholas Bridge	permanent replacement	\$2,500,000
		Washington Street	Sekiu	\$60,000
2009 - DR-1825	Severe winter storm, record and near-record snowfall	Highway 112 @ MP38, Nicholas Bridge washout	Road buckled and slide; bridge washed out completely.	\$3,000,000
			total	\$22,055,779

WSDOT Structurally Deficient Bridges



Washington State
 Department of Transportation

Structurally deficient means that a bridge requires repair or replacement of a certain component, such as cracked or spalled concrete or the entire bridge itself.

The following is a list of 142 state owned bridges classified as structurally deficient as of June 2008.

Being structurally deficient does not imply that the bridge is in danger of collapse or unsafe to the traveling public.

County	State		Bridge Name	Year		SD Problem	Status
	Route	Milepost		Built	Bridge Type		
Adams	90	221.95	SR 261 OC	1952	Concrete Slab	Superstructure	Monitor thru Insp - Program Future Repairs
Adams	90	221.95	SR 261 OC	1958	Concrete Slab	Superstructure	Monitor thru Insp - Program Future Repairs
Adams	261	57.9	DRY RUN	1900	Concrete Girder	Substructure	Monitor thru Insp - Program Future Repairs
Asotin	128	0.22	SNAKE R - RED WOLF BR	1979	Steel Box Girder	Deck	Programmed for Bridge Repair by contract
Benton	82	82.34	I-82 OC, WINE COUNTRY RD	1978	Prestress Conc Girder	Deck	Monitor thru Insp - Program Future Repairs
Benton	395	18.25	IMNAHA DR OC	1954	Steel Girder	Superstructure	Programmed for Bridge Repair by contract
Chelan	2	89.88	CHIWAUKUM CR	1936	Steel Girder	Scour	Programmed For Bridge Replacement
Chelan	97	181.94	LAHSON CANYON RD BRIDGE	1979	Prestress Conc Girder	Substructure	Monitor thru Insp - Program Future Repairs
Clallam	101	203.15	SOL DUC RIVER #2	1941	Steel Thru Truss	Deck	Monitor thru Insp - Program Future Repairs
Clallam	101	258.21	MCDONNELL CR	1939	Timber Girder	Scour	Monitor thru Insp - Program Future Repairs
Clallam	112	23.72	GREEN CR	1959	Timber Girder	Substructure	Monitor thru Insp - Program Future Repairs
Clark	5	18.21	E FK LEWIS R	1936	Steel Thru Truss	Superstructure	Programmed For Bridge Replacement
Clark	14	4.34	SR 14 OC, LIESER RD	1969	Pre-Tensioned Concrete Beam	Superstructure	Monitor thru Insp - Program Future Repairs
Clark	14	5.57	SR 14 OC, ELLSWORTH RD	1973	Pre-Tensioned Concrete Beam	Superstructure	Monitor thru Insp - Program Future Repairs
Clark	502	5.95	MILL CREEK NO 2	1970	Steel Culvert	Superstructure	Monitor thru Insp - Program Future Repairs
Columbia	12	372.57	WHETSTONE CR	1919	Concrete Slab	Substructure	Monitor thru Insp - Program Future Repairs
Columbia	261	10.27	TUCANNON R	1967	Prestress Conc Girder	Deck	Programmed for Bridge Repair by contract
Cowlitz	504	17.29	N FK TUITLE R KID VALLEY	1965	Steel Beam	Superstructure	Monitor thru Insp - Program Future Repairs
Ferry	21	130.74	SAN POIL R	1931	Concrete Girder	Scour	Monitor thru Insp - Program Future Repairs
Ferry	21	148.45	SAN POIL R	1931	Concrete Girder	Scour	Monitor thru Insp - Program Future Repairs
Ferry	21	147.61	SAN POIL R	1932	Concrete T-Beam	Scour	Monitor thru Insp - Program Future Repairs
Ferry	21	148.44	SAN POIL R	1927	Concrete T-Beam	Scour	Monitor thru Insp - Program Future Repairs
Franklin	395	20.04	US 395 OC, COURT ST	1966	Pre-Tensioned Concrete Beam	Superstructure	Programmed for Bridge Repair by contract
Grays Harbor	12	0.08	WISHKAH R HERON CS1415	1949	Steel Thru Truss	Substructure	Programmed for Bridge Repair by contract
Grays Harbor	101	86.76	HOQUIAM R-SIMPSON CS1412	1928	Steel Truss	Superstructure	Programmed for Bridge Repair by contract
Grays Harbor	101	98.13	W FK HOQUIAM R	1934	Timber Girder	Superstructure	Programmed For Bridge Replacement
Grays Harbor	101	99.49	W FK HOQUIAM R	1934	Timber Girder	Substructure	Programmed For Bridge Replacement
Grays Harbor	101	109	HUMPTULIPS R	1950	Steel Thru Truss	Scour	Programmed for Bridge Repair by contract
Grays Harbor	101	129.99	MILBOURN CREEK	1949	Concrete Slab	Scour	Monitor thru Insp - Program Future Repairs

County to consider supplemental appropriations

PENINSULA DAILY NEWS

Eye on Clallam

vices extending the Juvenile Accountability Incentive block grant another year and adding funding.

■ A contract with K&H printers for the Nov. 3 general election.

■ An agreement with the state Department of Licensing for public record information related to junk vehicles.

In Monday's 9 a.m. work session, the board will discuss:

■ A request from Homeland Bound for loan of up to \$75,000.

■ A request for proposals for consulting services to develop a curriculum to train homeowners how to inspect their own septic systems.

■ Proposed update to the Hazard Mitigation Plan.

■ A pre-application questionnaire for a grant from the state Department

160) at the Clallam County courthouse, 223 E. Fourth St., Port Angeles.

The hearings are scheduled to start at 10:30 a.m.

Other agenda items include:

■ Proclamations recognizing October as National Disability Employment Awareness month and as Domestic Violence Awareness and Prevention month.

■ An amendment with the state Department of Health and Human Ser-

vice also will continue an Aug. 18 hearing on proposed amendments to county code that would remove the proof of rabies vaccination requirement or rabies immunity at the time of licensing a dog or a cat.

The meeting will begin at 10 a.m. in the commissioners chambers (Room

9-27-2009

finalists for the city manager post in a closed executive session at the transit center.

The session will be held during a special meeting at 12:30 p.m.

After the closed meeting, the council may emerge to take action during an open session.

Port Angeles schools

The Port Angeles School Board will conduct a session of Community Conversations before considering at its regular meeting approval of a three-year agreement that raises salaries of maintenance and grounds when it meets Monday.

Both will be at Dry Creek Elementary School, 25 Rife Road.

During the Community Conversation at 6 p.m., the public can ask questions and discuss issues one-on-one with board members and district administrators. The regular meeting will open at 7 p.m.

The Local Union No. 589 of the International Brotherhood of Teamsters has

ratified a draft form of the agreement, which provides a state cost-of-living increase as well as step increases of 8 percent for three-year employees, 6.4 percent for five-year, 2.25 percent for 7-year and 2 percent per step for workers with 10 years tenure or more — except for maintenance seasonal workers, who will receive a 2 percent increase between steps.

The board also will hear an update on the Family Access program for the sixth grade. The program allows parents and students to access their grades and attendance records on the Internet.

Sequim City Council

The Sequim City Council will discuss a potential contract with Friendship Diversion for pre-prosecution diversion services when it meets Monday, and will talk about city manager finalist qualifications Friday.

Monday session will start at 6 p.m. in the Sequim Transit Center, 190 W. Cedar St.

On Friday, the Sequim City Council will discuss the qualifications of two

Public utility district

The Clallam County Public Utility District board will consider approval of change order for work on a warehouse conversion and a task order for the upgrade of some substations when it meets Monday.

The commissioners will meet at 1:30 p.m. at the district's Port Angeles office, 2431 E. U.S. Highway 101.

Clallam begins shoreline master program update

By Rob Ollikainen
PENINSULA DAILY NEWS

PORT ANGELES — Clallam County is lacing up its marathon shoes for the first overhaul of its 33-year-old shoreline master program.

It's not a sprint, but rather a drawn-out planning process that will ultimately shape the future of Clallam County shorelines.

"We're at the beginning of the process," said Steve Gray, Clallam County planning manager.

"We're planning a three-year process, at least."

The shoreline master program is a state-mandated document used to guide shoreline development.

It's a requirement of the Shoreline Management Act, which passed the state legislature in 1971 and was adopted by referendum in 1972. New guidelines for the shoreline programs were adopted in 2003.

The legislation is intended "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines," according to the state Department of Ecology.

The act gives preference to uses that protect water quality and the natural environment, that depend on proximity to the shoreline and preserve public access and recreational opportunities, Ecology says.

Each incorporated city and all 39 counties in the state must update their shoreline master programs by 2014.

Discussion Monday

Sally Totoff, Ecology's southwest director, Paula Ehlers, shoreline manager for the southwest region, and Jeff Stewart, shoreline planner, met with the three Clallam County commissioners and city of Port Angeles officials in a one-hour work

session at the county courthouse Monday.

Ehlers said each shoreline master program is a partnership between local government and the state.

"We both have roles to play in this effort," Ehlers said.

Clallam County in July received \$550,000 from the state to complete its update by 2012.

"You're the ones who lead this planning effort within your jurisdictions," Ehlers explained.

"You also are the ones that prepare a document, oversee, and enforce these locally-crafted programs."

"Our role, on the other hand, is really to provide state guidelines."

Ecology sets minimum standards for the programs and will offer technical assistance.

"That's our role — it's really to help you as much as we possibly can," Ehlers said.

The shoreline master program update becomes effective when it is approved by the director of Ecology. Ecology then becomes a full partner.

Ehlers said the underlying standard is "no net loss" of shorelines.

"There are numerous ways to effect no net loss," she said.

Clallam County has submitted to Ecology a draft scope of work for the update, Gray said. A final contract is pending.

"We don't expect any glitches," Gray said.

Public participation

One of the first tasks for the county is to develop a public participation strategy, which may include a new committee. Much of the first year will be spent on a shoreline inventory and a review of shoreline characterization.

A draft shoreline charac-

terization and inventory report should likely be ready by next spring or summer, Gray said.

Clallam County's original shoreline master program was adopted in 1976. The last revision was in 1992. It's never been completely overhauled.

The cities of Port Angeles, Sequim and Forks will draft their own updates.

While there is no lead agency, the four governments will "communicate as much as possible," Gray said.

"It may make sense to leverage our allocated dollars to pay for one consultant," he said.

Public forums — a major part of the process — will be held jointly between the county and the cities.

Much of the work for Clallam County's shoreline update already exists in its growth management plan, critical areas maps and salmon recovery shoreline districts.

"This is an opportunity to better integrate those plans," Gray said.

Jefferson County

Meanwhile, Jefferson County is close to finishing its shoreline master program update.

Jefferson County commissioners completed their revisions to a draft update earlier this month. They reviewed 1,035 public comments, held public hearings spent at least 27 hours in deliberations.

The board expressed a preference for a 150-foot standard marine buffer for new homes and a prohibition on marine aquaculture.

Department of Community Development will bring back a final draft for commissioners' consideration later this month.

Final adoption of Jefferson County's shoreline master program update is anticipated in mid- to late-2010.

60-81-01

APPENDIX D

AGENCY RECORDS OF ADOPTION

Clallam County



RESOLUTION N° 116, 2004
ADOPTING HAZARD MITIGATION PLAN

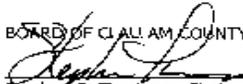
THE BOARD OF CLALLAM COUNTY COMMISSIONERS finds as follows:

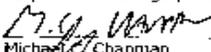
1. Clallam County must take legislative action by February 4, 2004 to review and adopt its Hazard Mitigation Plan to ensure that the plan meets the requirements set by the Washington State Emergency Management Division (EMD).
2. The EMD requires local governments to establish a Hazard Mitigation Plan to prepare for natural disasters.
3. Changes made to the plan include adding a glossary of acronyms, discussion of areas of chronic flood hazard, discussion of bluff instability, and a more flexible time schedule for three of the County's projects.
4. Public hearings were held on August 26, 2003 and January 6, 2004, which was continued to January 13, 2004, to gather and consider public comment on the plan.

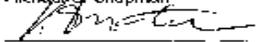
NOW, THEREFORE, BE IT RESOLVED by the Board of Clallam County Commissioners in consideration of the above findings of fact: that the Hazard Mitigation Plan is adopted

PASSED AND ADOPTED this thirteenth day of January, 2004

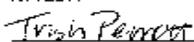
BOARD OF CLALLAM COUNTY COMMISSIONERS


Stephen P. Tharinger, Chair


Michael Chapman


Howard V. Doherty, Jr.

ATTEST:


Trish Perrott, Clerk of the Board

J:\public\resolutions\2004\hazard plan resolution.doc

City of Sequim

Resolution No. R-2004 -12

A Resolution of the City of Sequim, Washington Adopting the
Clallam County Hazard Mitigation Plan

WHEREAS, the Federal Emergency Management Agency (FEMA) mandated that communities adopt a hazard mitigation plan in order to remain eligible for FEMA emergency relief funds;

WHEREAS, the governmental agencies of Clallam County worked together over the course of over a year to develop this joint plan;

WHEREAS, public meetings and hearings have been held throughout the County, providing citizen input into the plan;

WHEREAS, the City is now required to adopt the plan to meet Federal requirements;

NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SEQUIM that:

1) The hazard mitigation plan, which addresses the concerns and needs of the City of Sequim and Clallam County, is hereby adopted.

Passed on this 14th day of July, 2004 by the Sequim City Council.

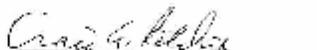
Adopted by the City Council this 15th day of November, 2004.


Walter E. Schubert, Mayor

ATTEST:

APPROVED AS TO FORM:


Karen Kuznick-Tress, CMIC, City Clerk


Craig B. Fisher, City Attorney

City of Port Angeles

RESOLUTION NO. 2-104

A RESOLUTION of the City Council of the City of Port Angeles, Washington, adopting the Clallam County Hazard Mitigation Plan to serve as a guide in reducing the City's risk from natural hazards.

The City Council has reviewed the proposed Clallam County Hazard Mitigation Plan; received the recommendations of the Fire Department, Department of Community Development, Public Works Department, and the Council's Health and Safety subcommittee; heard the presentation of the Fire Chief regarding the Plan; and reviewed the process by which the proposed Plan was formulated. Based on that information, the Council makes the following:

FINDINGS OF FACT:

1. The Federal Government provides communities with access to funding following a disaster for long-term hazard mitigation measures; and
2. Long-term hazard mitigation measures can assist in reducing or eliminating the loss of life and/or property damage should another natural disaster occur; and
3. Federal legislation requires that local governments applying for mitigation grant funding have in place an approved local hazard mitigation plan; and
4. The local hazard mitigation plan will serve as a guide for directing resources aimed at reducing the risks from natural hazards; and

Click on page 1 above to scroll to page 2.

Port of Port Angeles

Port of Port Angeles

Port Angeles, Washington

04-903

Commissioners' Resolution No.

A RESOLUTION ADOPTING HAZARD MITIGATION PLAN.

WHEREAS, the Commission of the Port of Port Angeles must take legislative action by March 8, 2004 to review and adopt its Hazard Mitigation Plan to ensure that the plan meets the requirements set by the Washington State Emergency Management Division (EMD); and

WHEREAS, the EMD requires local governments to establish a Hazard Mitigation Plan to prepare for natural disasters; and

WHEREAS, adoption of the Hazard Mitigation Plan is required for eligibility for future FEMA disaster mitigation assistance; and

WHEREAS, public hearings were held by Clallam County on August 26, 2003 and January 6, 2004, which was continued to January 13, 2004, to gather and consider public comment on the plan; and

WHEREAS, the Clallam County Commissioners adopted the Hazard Mitigation Plan on January 13, 2004 by County Resolution No. 16;

NOW THEREFORE BE IT RESOLVED, the Port of Port Angeles Board of Commissioners, in consideration of the above findings of fact, adopt the Hazard Mitigation Plan.

ADOPTED this 8th day of March 2004.

PORT OF PORT ANGELES
BOARD OF COMMISSIONERS


Leonard W. Bell, President


W.M. (Bill) Hannan, Vice President


John M. Calhoun, Secretary

APPENDIX E – MAPS

Map of Clallam County

Critical Facilities – Clallam County – West

Critical Facilities – Forks area detail

Critical Facilities – Clallam County – East

Critical Facilities – Port Angeles area detail

Critical Facilities – Sequim area detail

**End of
Clallam County Mitigation Plan update for
January 2010**