Jamestown S'Klallam Tribal Multi-Hazard Mitigation Plan

January 10, 2011

Submitted by:

WHPacific

U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796

FEMA

January 10, 2011

Honorable W. Ron Allen
Chairman, Jamestown S'Klallam Tribal Council
Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, Washington 98382

Dear Chairman Allen:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has approved the ***Jamestown S'Klallam Tribal Multi-Hazard Mitigation Plan*** as a Tribal Mitigation Plan, in accordance with 44 CFR Part 201. The Jamestown S'Klallam Tribe is now eligible to apply directly to FEMA as a grantee for Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) non-emergency programs through January 7, 2016. To continue eligibility, the plan must be reviewed, revised as appropriate and re-submitted for approval within five years from the date of this letter.

As a result of the Disaster Mitigation Act of 2000, States and Tribes are required to develop and maintain hazard mitigation plans compliant with FEMA standards as a condition for receiving non-emergency Stafford Act assistance. Applicable Stafford Act assistance includes Public Assistance (Categories C-G), Fire Management Assistance, Hazard Mitigation Grant Program, and Pre-Disaster Mitigation grants.

FEMA's approval of your plan as a Tribal Mitigation Plan provides the Jamestown S'Klallam Tribe's eligibility to apply for various Stafford Act programs. All requests for assistance, however, will be evaluated individually according to the specific eligibility and other requirements of the particular programs. For example, a mitigation action identified in the approved plan may or may not meet the eligibility requirements for HMGP funding. If you have any questions regarding specific program requirements and eligibility, please contact Braden Allen, Hazard Mitigation Assistance (HMA) Specialist for HMA programs, (425) 487-4749.

We look forward to continuing a productive relationship between FEMA Region 10 and the Jamestown S'Klallam Tribe. Please contact our Regional Tribal Liaison, Andy Hendrickson at (425) 487-4784, or our Regional Mitigation Planning Manager, Kristen Meyers at (425) 487-4543 with any plan-specific questions or for further assistance.

Sincerely,

Kenneth D. Murphy
Regional Administrator

BH:bb
Enclosure
cc: Leanne Jenkins, Tribal Planning Director

JAMESTOWN S'KLALLAM TRIBE

1033 Old Blyn Highway, Sequim, WA 98382 360/683-1109 FAX 360/681-4643

RESOLUTION 45-10

Adopting Tribal Multi-Hazard Mitigation Management Plan

WHEREAS, the Jamestown S'Klallam Indian Tribe ("Tribe") was Federally acknowledged by the Secretary of the Interior of the United States of America on February 10, 1981; and

WHEREAS, the Jamestown S'Klallam Tribal Council ("Council") is the governing body of the Tribe, in accordance with its Constitution adopted on November 19, 1983, pursuant to the provisions of Part 81 of the Code of Federal Regulations; and

WHEREAS, the health, safety, welfare, education, and regulation of treaty fishing, hunting, and gathering practices of the Indian people of the Tribe is the responsibility of the Council; and

WHEREAS, the Tribe has an interest in protecting its people and assets from damage due to natural disasters; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires that the Tribe develop a Tribal Multi-Hazard Mitigation Plan in order to be eligible for funding; and

WHEREAS, the Tribe has coordinated a planning process that meets the guidelines and requirements of FEMA for pre-disaster hazard mitigation plans:

1. the Tribe has conducted an assessment of risks to Tribal property and people from potential natural hazards
2. the Tribe has identified strategies to mitigate the potential effects of natural disasters;
3. the Tribe has identified a schedule for implementing and maintaining the plan;
4. Tribal citizens, Tribal staff, other jurisdictions and the general public were solicited for input into the plan; now

THEREFORE, BE IT RESOLVED, that the Council does hereby adopt the Tribal Multi-Hazard Mitigation Plan.

W. Ron Allen

W. Ron Allen, ~~Tribal~~ Chairman

Certification

I, Liz Mueller, Tribal Vice Chair of the Jamestown S'Klallam Tribe, do hereby certify that the preceding resolution was adopted at a meeting of the Jamestown S'Klallam Tribal Council held on the 20th day of December, 2010 at the Jamestown S'Klallam Tribal Office in Blyn, Washington, and where a quorum was present and approving the resolution by vote of 5 FOR and 0 AGAINST with 0 ABSTAINING.

Liz Mueller, Tribal Council Vice Chair

Jamestown S'Klallam Tribal Multi-Hazard Mitigation Plan

FIGURES

TABLES

1 Planning Process and Methodology

1.1 Introduction

Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to human life and property from hazards. Mitigation activities may be implemented prior to, during, or after an incident. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs (FEMA 386-8).

Tribal Mitigation Planning regulations are found in the Code of Federal Regulations at 44 CFR Part 201.7. This plan has been developed using the regulations to ensure compliance with federal criteria. Federal regulations specify that local mitigation plans be designed to help jurisdictions identify specific actions to reduce loss of life and property from natural hazards. It is not intended to help jurisdictions establish procedures to respond to disasters or write an emergency operations plan. The goal of mitigation is to decrease the need for response as opposed to increasing response capability (FEMA 386-8).

The scope of this plan is natural hazards present in the community: **flooding, landslide/erosion, severe weather, wildland fire, and earthquake hazards**. However, some of the mitigation projects for the natural hazards would also mitigate impacts from human-induced hazards, as well.

> *The Indian Tribal Mitigation Plan is the representation of the Indian tribal government's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards.*
>
> *~ 44 CFR Part 201.7*

The Jamestown S'Klallam Tribe Local Multi-Hazard Mitigation Plan (MHMP) provides information on natural hazards that affect the Tribe, descriptions of past disasters, and projects that may help the tribe prevent disaster losses. The plan was developed to help the community make decisions regarding natural hazards that could affect the Tribe.

1.2 Plan Preparation

The Jamestown S'Klallam Tribe hired WHPacific to develop a Hazard Mitigation Plan specifically to address hazards impacting the Tribe, as they had previously been a part of the Clallam County plan and wanted the new plan to be more specific to the Tribe's needs. This document is a local multi-hazard mitigation plan (MHMP) addressing those natural hazards that affect the tribe's lands.

In developing the Jamestown S'Klallam MHMP, the planning team reviewed each section of the 2004 *Clallam County Hazard Mitigation Plan* to determine current relevance, project status, and previously assessed vulnerabilities. Since the County plan was area-wide, the current MHMP is more detailed about hazards specifically affecting the Tribal lands. However, many projects still involve cooperation with the County and with other local and regional entities.

In the current plan, drought is addressed as a part of Chapter 6, Severe Weather rather than as its own section as it was in the County plan. The other hazards addressed in the current MHMP are the same as

those in the County plan; however, additional information specific to the Tribe and its infrastructure is added.

FEMA guidance (44 CFR Part 201), potential funding sources (Hazard Mitigation Grant Program and Pre Disaster Mitigation) and programs (such as National Flood Insurance Program) were used as a basis for documentation and compliance as well as being a framework for plan development.

1.2.1 Project Staff

Leanne Jenkins, Planning Director, was the primary Tribal staff person on this project; Ms. Jenkins was assisted by Betty Oppenheimer, publications specialist, who facilitated the dissemination of information on the project to Tribal citizens and the public. Annette Nesse, Chief Operations Officer, provided details on Tribal projects and long-range plans; Leo Gaten, Tribal Policy Advisor, provided insight into the Tribal Code; and Hansi Hals, Environmental Planning Manager, gave input on Tribal natural resource management.

WHPacific was hired to write the plan with the Tribe. Clallam County and State of Washington Emergency Management Division officials provided additional information.

1.2.2 Plan Research

The plan was developed using existing Jamestown S'Klallam Tribal plans and studies as well as outside information and research. The following list contains the most significant of the plans, studies and websites that were used in preparing this document. The bibliography contains a complete list of sources.

1. *Washington State Enhanced Hazard Mitigation Plan*, prepared by the Washington Military Department Emergency Management Division, January 2008.
2. *Jamestown S'Klallam Tribal Comprehensive Plan,* prepared under the direction of the Jamestown S'Klallam Tribal Council, 2008.
3. FEMA How to Guides:
    a. *Getting Started: Building Support For Mitigation Planning* (FEMA 386-1)
    b. *Local Multi-Hazard Mitigation Planning Guidance*, July 1, 2008 (FEMA 386-8)
    c. *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA 386-2)
    d. *Developing The Mitigation Plan: Identifying Mitigation Actions And Implementing Strategies* (FEMA 386-3)
    e. *Bringing the Plan to Life: Implementing the Hazard Mitigation Plan* (FEMA 386-4)
    f. *Using Benefit-Cost Review in Mitigation Planning* (FEMA 386-5)
4. *Hazard Mitigation Plan for Clallam County, Draft,* prepared by Clallam County Sheriff's Office Emergency Management Division, January 2010.
5. *Dungeness River Comprehensive Flood Hazard Management Plan,* Clallam County, 2009.
6. *Clallam County Hazard Mitigation Plan,* prepared by GeoEngineers, December 2004.
7. *Wildfire Hazard Assessment and the Wildland-Urban Interface of the North Olympic Peninsula*, Peninsula College, Washington, http://www.pc.ctc.edu/coe/pdfs/WUIAtlasFinalWEB.pdf
8. USGS Earthquake Probability Mapping: www//eqint.cr.usgs.gov/eqprob/2002/index.php

General Hazard Planning Web Sites

American Planning Association:	http://www.planning.org
Association of State Floodplain Managers:	http://www.floods.org
Federal Emergency Management Agency:	http://www.fema.gov/
Community Rating System:	http://www.fema.gov/business/nfip/crs.shtm
National Flood Insurance Program:	http://www.fema.gov/business/nfip/
Flood Mitigation Assistance Program:	http://www.fema.gov/government/grant/fma/index.shtm
Hazard Mitigation Grant Program:	http://www.fema.gov/government/grant/hmgp/index.shtm
Individual Assistance Programs:	http://www.fema.gov/assistance/process/assistance.shtm
Public Assistance Program:	http://www.fema.gov/government/grant/pa/index.shtm

1.2.3 Public Involvement

Input into the Jamestown S'Klallam Tribe's MHMP was solicited from Tribal citizens and non-Tribal citizens alike. Although emphasis in outreach was naturally on the Tribe, the "public" is considered in the plan to be all interested parties and not only the Tribal citizens. Documentation of the public involvement process, including minutes, handouts, summaries, newsletter listings and sign-in sheets, is located in Appendix A, Public Involvement.

The Jamestown S'Klallam Tribe's General Citizenship Meeting took place March 7, 2009, at which natural hazard concerns were discussed. Attendance included representatives of the Tribal Council as well as other interested members of the public.

In September 2009, Suzanne Taylor and Colleen Jollie of WHPacific met with Tribal leaders, and Clallam County Emergency Management staff to discuss the plan and local hazard issues. Coordination with Jamye Wisecup, Penny Linterman and Ronald Peregrin with Clallam County was ongoing through the planning process.

On January 7, 2010, the WHPacific team presented information on the MHMP and associated potential funding programs to citizens of the Jamestown S'Klallam Tribe's Executive Committee. Comment forms were distributed.

Also on January 7, 2010, Suzanne and Colleen met with the Jamestown S'Klallam Tribe's Elders' Crafting Group. These long-time residents of the area were able to provide valuable information on previous hazard events as well as the concerns of area residents. Comment forms, information packets, and contact information were left with the group.

Tribal citizen Elaine Grinnell and Colleen Jollie of WHPacific chat at the Upper Tribal Campus.

Information about the plan and process and a response form were included in the Tribe's February 2010 newsletter with a follow-up article in the March edition. Each month, 720 newsletters are printed, of which 650 are mailed to tribal citizens and interested parties throughout the area and beyond; the rest are distributed at the Tribal Center.

The draft MHMP was submitted to the Tribe for review in March 2010, and Colleen Jollie of WHPacific attended the Tribe's General Citizenship Meeting on March 13, 2010 to discuss the draft as well as concerns and potential mitigation ideas. Comments were incorporated into the document. A copy of the draft MHMP is available for public review at the Jamestown S'Klallam planning department office and electronically on the Tribe's website www.jamestowntribe.org.

The Jamestown S'Klallam Tribe will review and approve the plan after pre-approval by the Washington Military Department Emergency Management Division (EMD) and FEMA.

1.2.4 Plan Organization

This Plan's organization and contents are as follows:

- Planning Process
- Community Profile
- Risk Assessment
  - Flood
  - Landslide/Erosion
  - Severe Weather
  - Tsunami
  - Wildland/Wildland Urban Interface Fire
  - Hazards not Profiled
- Mitigation Strategies
- Plan Implementation and Maintenance
- Appendices

2 Community Profile

2.1 Location

Jamestown S'Klallam Tribal citizens live in northwestern Washington State, on the Olympic Peninsula from Port Angeles to Port Townsend. Having no reservation base before 1986, the main population is centered in the town of Sequim and the Blyn area. In 1986, a 2-acre reservation was established in Blyn where the Tribal Administration Center and other government services are now located. Over time, additional land was acquired to support development of several economic ventures. The Tribe's historic residential area is known as Jamestown and is located north of Sequim along the shore of the Straits of Juan de Fuca.

2.2 History

"A major factor in the stability and continuity of the Tribe has consistently been the Jamestown land base purchased in 1874. This provided a geographic center for group identity and independence." (Wray, 2002) Klallam villages were historically located within the Dungeness River watershed, at Port Discovery, Port Townsend and Washington Harbor. Being displaced in the 1850s by American settlers, the people led by Chief James Balch, pooled their resources to purchase 210 acres along the shores of Dungeness Bay.

In the 1930s, as part of the Indian Reorganization Act, the Jamestown people almost joined neighboring Klallam Tribes but would have had to leave their homes and lose independence, so they chose to remain unrecognized by the federal government. Under the federal Termination Policies of the 1950s, Jamestown S'Klallam no longer received services; but, they maintained a distinct community and were characterized as a progressive Indian community as they integrated into the neighboring community and its economy. They were denied their fishing and hunting rights and the lack of services for health, social and educational programs prompted Tribal leaders to pursue federal recognition in the 1960s. On February 10th, 1981, they were successful in gaining that recognition. In 1988, Jamestown went on to become national leaders as one of seven tribes to participate in the first tier of the Self-Governance Demonstration Project, as part of the Indian Self-Determination and Education Assistance Act of 1988.

Self governance is based firmly in the principle of Tribal sovereignty and the unique government-to-government relationship between the federal government and Indian Tribes. Self-governance funding is subject to the United States Office of Management and Budget regulations and annual audits. It provides support for education, housing, employment assistance, family preservation and support activities, water resource planning, and business development.

The leadership of the Jamestown S'Klallam Tribe was a key influence in the further development of securing similar intergovernmental relationships between the State of Washington and the regional Tribes through the 1989 Centennial Accord which recognizes each other's sovereignty and Tribal rights to govern their own citizenry. Each state agency is mandated to develop their own Centennial Accord Plan through which they provide services and engage in meaningful consultation with tribes whose interests may be impacted by state programs and activities. In an ever-widening circle, local agencies led by county and city councils are following suit. In addition to this, the Jamestown S'Klallam tribe has entered into Memoranda of Agreements with other local Tribes to enhance the welfare of their common interests. The Jamestown S'Klallam Tribe now enjoys a prominent position in governmental matters that affect their citizens at every level.

2.3 Culture

"The sea and rivers have linked the Jamestown S'Klallam to their traditions, values, and beliefs for generations and continue to do so. The Dungeness estuary is a lifeline for the Jamestown S'Klallam people" (Wray, 2002). Tribal culture is absolutely tied to the environment; the arts, language and even family structure and relationships evolved over thousands of years from the land and waterways. There are stories and history of such things as earthquakes, tidal waves, great fires, the possibilities of which this Hazard Mitigation Plan is intended to address. There are stories, too, of sea creatures and other mythological beings that inform the people about geological features where they live, and how to live well, how to care for each other. These things were mentioned in the community involvement meetings that were held to provide information about this plan. The stories were almost lost, but today they are shared by Tribal Elders and kept in the Tribal library. The stories continue to connect the people to the resources and guide their management decisions.

2.4 Population

According to the *Jamestown S'Klallam Tribal Comprehensive Plan,* at the end of fiscal year 2007, the Jamestown S'Klallam Tribe's population included 579 enrolled citizens in 506 households. Since there is no traditional reservation, the Tribal citizens and their families live in the communities of Clallam and Jefferson counties, throughout Washington State, and are scattered across the nation.

According to the 2007 data, the local population of Tribal citizens consists of 224 individuals who live within the Tribe's designated Service Area. The breakdown of these individuals includes:

Males.....	115
Females.....	109
Elders (55 years and older).....	34 percent

Within the next ten years, 47 additional citizens will advance to age 55.

2.5 Economy

The Tribe formed an Economic Development Corporation in 1983. Descriptions of their business ventures are taken from the Tribe's website:

- 7 Cedars Casino - The casino provides the energy and excitement of a Las Vegas style casino. It has two on-site restaurants.
- JKT Development, Inc. - This company was formed to oversee and promote a number of business divisions including: JKT Construction; Jamestown Excavating; Jamestown HomeBuilding; and Jamestown Information Technologies.
- Jamestown Health & Medical Supply Company – the Jamestown S'Klallam Tribe has a partnership with the RelyAid Company to offer thousands of medical, dental and hospitality products for all types of clinic and hotel needs.
- Northwest Native Expressions Gallery – There are two art galleries, one located at the 7 Cedars Casino, and the other next to the Tribal Administration Building, which feature local and regional Native artwork.
- Jamestown Fireworks is located adjacent to the 7 Cedars Casino. Fireworks are sold during a four-month period from Memorial Day through Labor Day.
- The Cedars at Dungeness is an 18-hole championship golf course, with a restaurant and pro-shop.

- Longhouse Market & Deli is the latest business venture. In addition to selling groceries and deli items, the store also sells gas to tourists and residents along the U.S. Highway 101 corridor.

2.6 Utilities

Much of the Jamestown S'Klallam Tribe is served by the Clallam Public Utility District #1; however, the Tribe owns and operates the following utilities:

The Jamestown residential area has its own well and water transmission system. This well is located in an area that could be subject to flooding and possible mitigation strategies are discussed later in this report.

Additionally, the Tribe has a main well and 105,000-gallon reservoir storage up Zaccardo Road that serves the main Tribal campus, the Longhouse Market, the fire station, and several residences. There are also smaller wells whose primary purpose is irrigation. The 7 Cedars Casino had its own well.

The large on-site sewage system that serves the Tribal campus has collection tanks by the shoreline that are pumped up to the drainfield on Zaccardo Road where the Tribe has a separate, advanced-treatment system that serves the Longhouse Market and the Tribal government facilities.

2.7 Transportation

The following information is taken from the *Jamestown S'Klallam Tribal Comprehensive Plan, 2005-2015.*

> Much of Tribal commerce and development will depend on the capability of US Highway 101 to function efficiently as a regional traffic corridor, and provide safe local access. Safety improvements on the corridor should be timed with Tribal land development. Traffic safety is a continuing concern.
>
> Safety projects were identified in the Tribe's transportation plans and priority list. However, only two (the Pedestrian-Service Cart Tunnel and the Jimmycomelately Creek Relocation) have been funded and implemented.
>
> In response to 19 deaths which occurred on US 101 in Clallam County in 2003 and 2004, a consortium of local government, media, civic and business groups, including the Jamestown S'Klallam Tribe, joined forces to form the "Driving 101 Traffic Safety" project, consisting of engineering improvements, extra enforcement patrols, and increased public awareness and education about safe driving practices via signage and media involvement.
>
> Two public bus lines serve Tribal facilities in Blyn; the service is infrequent so ridership is relatively low. Access to public transportation for Tribal elders and handicapped is severely limited. In Blyn, non-motorized service will improve when the Olympic Discovery Trail is completed. However, wider road shoulders and safe pathways to these facilities will still be needed. In the Jamestown residential area, road shoulders are narrow and hamper safe pedestrian and vehicle travel.
>
> In addition, the parking facility for the Dungeness River Audubon Center requires upgrade, expansion and maintenance. Seasonal flooding blocks access to the Park's River Center.

The Tribe purchased and operates its own passenger vans to provide transit services to Tribal Elders and youth.

Transportation networks are critical in disaster response. Highway 101 is the only access from Sequim to Port Angeles where the hospital is located. The Jamestown S'Klallam Tribe is generally separated from major metropolitan areas by large bodies of water that require bridges or boats to cross. Loss of

these would isolate the community and slow outside response capability. It is important that Tribal citizens are ready and able to care for themselves and others in the event of an emergency.

3 Risk Assessment

Section 201.7(c)(2) of the FEMA mitigation planning regulations requires local jurisdictions to provide sufficient hazard and risk information from which to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

3.1 Hazard Assessment

The purpose of the hazard assessment is to define where hazards occur and their characteristics. The impacts of a hazard are dependent on the geography, and where human development and transportation facilities are located. The Tribe used the following sources to identify the hazards present in the community: the *Clallam County Hazard Mitigation Plan* of December 2004 and the January 2010 draft update, *Washington State Enhanced Hazard Mitigation Plan* of November 2007, interviews with experts and long-time residents, and previous occurrences of events.

3.2 Local Conditions

3.2.1 Location

The Jamestown S'Klallam Tribal community is located on the northern portion of the Olympic Peninsula of Washington State, approximately 70 miles northwest of the city of Seattle. The Tribe's Land Consolidation Area spans approximately 32 miles east-to-west, 36 miles north-to-south, and covers 363 square miles of land.

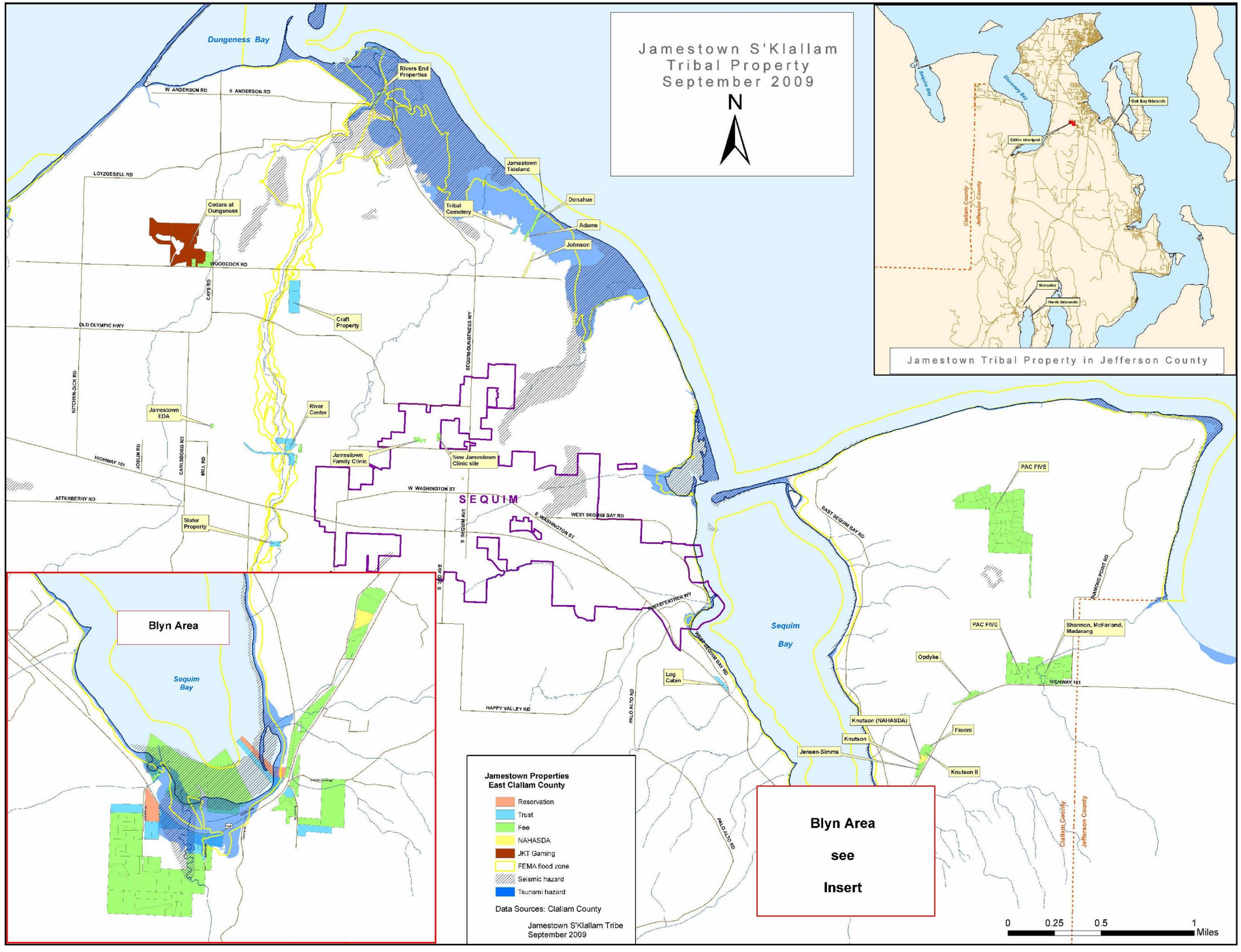
Two counties, Clallam and Jefferson, comprise the bulk of the Olympic Peninsula. The Peninsula is bounded by the Pacific Ocean to the west, the Strait of Juan de Fuca to the north, by Hood Canal on the east and by the Olympic Mountain range to the south.

The project area is shown in Map 1, which was produced by the Tribe's GIS department.

3.2.2 Climate

The Olympic Peninsula is located in a moist and mild maritime climatic zone. Annual precipitation varies widely on the Peninsula, from over 100 inches annually on the west end to only 17 inches in the Sequim area, the location of the Jamestown S'Klallam Tribe's governmental campus and two major revenue-generating businesses. While the western slopes are classified as a rainforest, the "rainshadow" portion of the peninsula is the driest region in western Washington. The rainshadow includes the lower elevations along the northeastern slopes of the Olympic Mountains, extending east along the Strait of Juan de Fuca from near Port Angeles, east to Whidbey Island and 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 the ocean. Rainfall in this area is frequently a drizzle or light rain while other locations on the peninsula are experiencing light to moderate rainfall. The average annual temperature is 51˚ Fahrenheit (F). The western side of the Olympic Peninsula has frequent cloud cover, considerable fog, and long-lasting drizzles.

Figure 1 - Jamestown S'Klallam Tribal Property and Hazards Vulnerability



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3.2.3 Infrastructure and Facilities

Every jurisdiction is unique. The list of assets that are most important to protect, as well as how vital a facility is to residents' lives, health, and safety, can vary widely from community to community. For planning purposes, a jurisdiction should determine criticality based on the relative importance of its various assets for the delivery of vital services, the protection of special populations, and other important functions.

Infrastructure may be considered critical for a variety of reasons including the importance of the infrastructure to the Tribe in times of emergency or for the continued sustainability of the Tribe, the vulnerability of the population being served, or the importance of the facility to the Tribe historically or culturally. A list of properties owned by the Tribe and their replacement value from insurance assessment is located in Appendix B.

3.3 Identification of Key Hazards

Based on consultation with the State of Washington Emergency Management Division, *Washington State Enhanced Hazard Mitigation Plan* of November 2007, *Clallam County Hazard Mitigation Plan* of December 2004, Jamestown S'Klallam Tribe plans and reports, and stakeholder interviews, the Tribe identified the following hazards to be profiled. Each hazard that is present in the community is profiled in hazard-specific sections and those hazards not profiled are briefly discussed in chapter 9.

Table 3.1 - Hazard Identification and Decision to Profile

Hazard	Yes/No	Decision to Profile Hazard
Flood	Yes	Designated as a hazard due to extensive history of flood and channel migration damages. Identified as a hazard in both the *Washington State Hazard Mitigation Plan* and *Clallam County Hazard Mitigation Plan*.
Severe Weather	Yes	Designated as a hazard in *Clallam County Hazard Mitigation Plan*. The area is impacted by winter storms that move inland off the ocean, resulting in frequent heavy precipitation and gale force winds.
Earthquake	Yes	Identified as a hazard in both the *Washington State Hazard Mitigation Plan* and *Clallam County Hazard Mitigation Plan*.
Landslide/Erosion	Yes	Designated as a hazard due to history of extensive landslide damage. Designated as a hazard in both the *Washington State Hazard Mitigation Plan* and *Clallam County Hazard Mitigation Plan*.
Tsunami	Yes	Identified as a hazard in both the *Washington State Hazard Mitigation Plan* and *Clallam County Hazard Mitigation Plan*. Most of the area's population lives along the shorelines where tsunamis typically cause the most casualties and severe damage.
Wildland Fire	Yes	Identified by the community and in studies as a hazard.
Volcano	No	Though ash from Mount Rainier or Mount St Helens could reach the Jamestown S'Klallam Tribal lands, other damage is not considered likely.
Avalanche	No	Not designated as a hazard in the *Clallam County Hazard Mitigation Plan*, as terrain is not conducive to avalanche formation.

3.4 Vulnerability Assessment Methodology

The purpose of a vulnerability assessment is to identify the assets of a community that are susceptible to damage should a hazard incident occur.

Critical facilities are described in the Risk Assessment Section of this hazard plan. Facilities were designated as critical if they are: (1) vulnerable due to the type of occupant (children or elders, for example); (2) critical to the community's ability to function (roads, power generation facilities, water treatment facilities, and other utilities); (3) have a historic or cultural value to the community (trestle and bridge structures, totems, carving shed and others); (4) critical to the community in the event of a hazard occurring (emergency shelter, for example); or (5) critical to the Tribe's sustainability (such as, the 7 Cedars Resort).

Chapter 3 provides an overview of the hazard identification and assessment methodology. This is followed by hazard specific chapters on flood, landslide and erosion, earthquake, tsunami, and wildland fire.

The description of each of the identified hazards includes a narrative and references Figure 1 - Jamestown S'Klallam Tribal Property and Hazards Vulnerability, to provide the following information:

- The **location** or geographical areas in the community that would be affected.
  The location of identified hazards is described by a map wherever appropriate or in some cases with a narrative statement.
- The **extent** (i.e. magnitude or severity) of potential hazard events is determined.
  The following table is used to rank the extent of each hazard. Sources of information to determine the extent of each hazard include historical or previous occurrences and information from residents.

Table 3.2 - Criteria for Extent-of-Hazard Ranking

Magnitude/Severity	Criteria to Determine Extent
Catastrophic	Multiple deaths Complete shutdown of facilities for 30 or more days More than 50% of property severely damaged
Critical	Injuries and/or illnesses result in permanent disability Complete shutdown of critical facilities for at least 2 weeks More than 25% of property is severely damaged
Limited	Injuries and/or illnesses do not result in permanent disability Complete shutdown of critical facilities for more than one week More than 10% of property is severely damaged
Negligible	Injuries and/or illnesses are treatable with first aid Minor quality-of-life lost Shutdown of critical facilities and services for 24 hours or more Less than 10% of property is severely damaged

Source: Alaska All-Hazard Risk Mitigation Plan. The *Alaska All-Hazard Risk Mitigation Plan* was used as a source for ranking severity because of its clear criteria for extent and probability.

- The **impact** of the hazard or its potential effects on the community is described.
- The **probability** that the hazard event will occur or recur in the area.
  The following table defines the probability levels used to rank hazards in this plan. Sources of information to determine the probability include the *Washington State Hazard Mitigation Plan*

and *Clallam County Hazard Mitigation Plan*, historical or previous occurrences and information from the location of the hazard.

Table 3.3 - Probability Criteria Table

Probability	Criteria Used to Determine Probability
Low	Hazard is present with a low probability of occurrence within the next ten years. Event has up to 1 in 10 years chance of occurring.
Medium	Hazard is present with a moderate probability of occurrence with the next three years. Event has up to 1 in 3 years chance of occurring.
High	Hazard is present with a high probability of occurrence within the calendar year. Event has up to 1 in 1 year chance of occurring.

Source: Alaska All-Hazard Risk Mitigation Plan

Previous occurrences of hazard events.

The previous occurrences of natural events are described for identified natural hazards. The information was obtained from the *Washington State Hazard Mitigation Plan, Clallam County Hazard Mitigation Plan, Federal Declarations for Washington State 1956-2009*, City records, other state and federal agency reports, newspaper articles, and web searches.

3.4.1 Infrastructure Vulnerability Assessment

The Tribe is very aware of the vulnerability of its lands to natural hazards. Where practicable, they are locating new infrastructure in areas less vulnerable to hazards, such as within Sequim, Port Angeles and Carlsborg; however, much of the Tribe's traditional lands are vulnerable, as shown on Figure 1 - Jamestown S'Klallam Tribal Property and Hazards Vulnerability. The Tribal government will use information from this plan when considering the impacts of natural hazards on the siting of new infrastructure and facilities. Mitigation measures are being included in all new designs to reduce vulnerability to hazards present in that particular area. Because the Tribe is spread out over a considerable area, no overall summary statement can be made about the Tribe's vulnerabilities. Table 3.4 presents the vulnerability of Tribal lands by area or subarea.

Table 3.4 - Hazard Vulnerability Ratings by Area or Subarea

Planning Area	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Blyn Upper	**H**	**H**	**H**	**H**	**L**	**H**
Blyn Lower	**H**	**H**	**H**	**H**	**H**	**L**
Audubon/Dungeness River	**H**	**H**	**H**	**H**	**M**	**H**
Dungeness	**H**	**H**	**H**	**L**	**M**	**H**
Casino Subarea	**H**	**H**	**H**	**H**	**H**	**H**
Carlsborg	**L**	**H**	**H**	**L**	**L**	**H**
Miller Peninsula subarea	**L**	**H**	**H**	**L**	**L**	**H**
Jamestown	**H**	**H**	**H**	**L**	**H**	**L**
Port Angeles City	**L**	**H**	**H**	**L**	**L**	**M**
Sequim City	**L**	**H**	**H**	**L**	**L**	**M**

Table 3.5 provides an overview of the Jamestown S'Klallam Tribal infrastructure and their vulnerability to the hazards identified in Table 3.1. A vulnerability ranking of High (H), Moderate (M), or Low (L) was assessed for each facility and each hazard. These were based on the 2009 hazard mapping shown in Figure 1, with data from Clallam County, as well as planning area vulnerabilities shown in Table 3.4, based on the Jamestown S'Klallam Tribe's *Vision Master Plan* areas and subareas.

Table 3.5 - Tribal Properties, Importance, and Vulnerability to Identified Hazards

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Dwelling 145 Greenbriar Lane Sequim, WA	Audubon/ Dungeness River	Tribal Rental	H	H	M	M	M	H
Interpretive Building Railroad Bridge Park Sequim, WA	Audubon/ Dungeness River	Cultural/Historical/ Educational	H	H	M	M	M	H
Olympic Discovery Trail Dungeness River/RR Bridge Park	Audubon/ Dungeness River	Transportation, tourism	H	H	H	H	H	M
Picnic Structure Railroad Bridge Park Sequim, WA	Audubon/ Dungeness River	Visitor facilities/ recreational	H	H	M	M	M	H
Railroad Bridge Park Bridge Railroad Bridge Park Sequim, WA	Audubon/ Dungeness River	Cultural/Historical/ Educational/ Recreational/ Transportation	H	M	H	H	H	M
Railroad Bridge Park Trestle Railroad Bridge Park Sequim, WA	Audubon/ Dungeness River	Cultural/Historical/ Educational/ Recreational Transportation	H	H	H	H	H	M
Restrooms Railroad Bridge Park Sequim, WA	Audubon/ Dungeness River	Visitor facilities	H	H	M	M	M	H
JKT Development, Inc. 15405 SE 37th St #200 Bellevue WA 98006	Bellevue Urban	Tribal economic asset		M	H		L	L

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
"House of Myths" Carving Building 991 Old Blyn Hwy, Sequim, WA	Blyn (lower)	Cultural asset/ tourism	H	H	H	H	H	L
Annex - Building 991 Old Blyn Highway Sequim, WA	Blyn (lower)	Offices, Tribal records and cultural artifacts and archives storage,	H	H	H	H	H	L
Annex - Gallery Gift Shop 991 Old Blyn Hwy, Sequim, WA	Blyn (lower)	Cultural and economic asset/ tourism	H	H	H	H	H	L
Annex - Library Collection 991 Old Blyn Hwy Sequim, WA 99382	Blyn (lower)	Cultural assets	H	H	H	H	H	L
Campus Maintenance Bldg 1033 Old Blyn Hwy, Sequim, WA	Blyn (lower)	Equipment facility	H	H	H	H	H	L
Dental Clinic/Community Center 1031 Old Blyn Hwy Sequim WA	Blyn (lower)	Vulnerable population Essential facilities	H	H	H	H	H	L
Display Sign 3830 West Sequim Bay, Sequim, WA	Blyn (lower)	Economic asset	L	H	H	M	M	H
Heron Hall 1033 Old Blyn Hwy, Sequim, WA	Blyn (lower)	Potentially vulnerable population	H	H	H	H	H	L
JKT Log Structure 3830 West Sequim Bay, Sequim, WA	Blyn (lower)	Historical building Tribal records; future fireworks retail	L	H	H	M	M	H
JKT Office Pump Bldg 3830 West Sequim Bay, Sequim, WA	Blyn (lower)	Critical Infrastructure	L	H	H	M	M	H

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Mobile Home 271963 Hwy 101 E Sequim, WA	Blyn (lower)	Tribal Rental	H	H	M	L	L	M
Modular 2092 Old Blyn Highway Sequim, WA	Blyn (lower)	Tribal Rental	H	H	H	M	H	M
Nason Property - Garage 931 Old Blyn Highway, Sequim, WA	Blyn (lower)	Exercise facility	H	H	H	H	H	L
Olympic Discovery Trail Hwy 101-Log Cabin Blyn	Blyn (lower)	Transportation, tourism	H	L	H	H	M	L
Olympic Discovery Trail Hwy 101-Tribal Campus Blyn	Blyn (lower)	Transportation, tourism	H	L	H	H	M	L
Rental Dwelling 1950 Old Blyn Hwy Sequim, WA 98382	Blyn (lower)	NAHASDA	H	H	H	M	H	M
Rental Dwelling (Knutson) 2150 Old Blyn Hwy Sequim, WA 98382	Blyn (lower)	Tribal Rental	H	H	H	M	H	M
Rental Dwelling (Jensen-Sims) 1790 Old Blyn Hwy Sequim, WA 98382	Blyn (lower)	Tribal Rental	H	H	H	M	H	M
Dwelling (Opdyke) 2539 Old Blyn Highway Sequim, WA 98382	Blyn (lower)	Tribal Rental	H	H	H	M	H	M
Totems and Carved Panels Sequim, WA 99382	Blyn (lower)	Cultural assets	M	L	H	H	M	M
Tribal Center 1033 Old Blyn Hwy, Sequim, WA	Blyn (lower)	Offices Tribal records	M	H	H	M	H	L

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Tribal Planning Office 931 Old Blyn Highway, Sequim, WA	Blyn (lower)	Tribal offices, records and archives	H	H	H	H	H	L
Tribal Wastewater Infrastructure – Lower Campus Sequim, WA 98382	Blyn (lower)	Wastewater collection and distribution	H	L	H	H	H	L
Pedestrian Tunnel under Highway 101	Connecting Blyn lower and upper	Transportation			M			
Barn 263 Zaccardo Road, Sequim, WA	Blyn (upper)	Equipment storage	M	H	H	M	L	H
Canoe Shed 263 Zaccardo Road, Sequim, WA	Blyn (upper)	Cultural/Historical Asset	M	H	M	M	L	H
Deck and Cover 263 Zaccardo Road, Sequim, WA	Blyn (upper)	Residential appurtenance	M	H	H	M	L	H
Education Center/ Children's Program Facility (Gesdahl) 233 Zaccardo Road, Sequim, WA	Blyn (upper)	Vulnerable population	M	H	M	M	L	H
Maintenance Building 263 Zaccardo Road, Sequim, WA	Blyn (upper)	Equipment storage	M	H	M	M	L	H
Rental Dwelling (Lamp) 120 Zaccardo Road Sequim, WA 98382	Blyn (upper)	Tribal Rental; future fitness center	M	H	H	M	L	H
Rental Dwelling (Carlson) 263 Zaccardo Road, Sequim, WA	Blyn (upper)	Tribal Rental	M	H	M	M	L	H

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Scenic Pullout: Interpretive Display Bldg Hwy 101, Sequim, WA Sequim, WA	Blyn (upper)	Cultural/Historical tourism	H	H	M	M	H	L
Scenic Pullout: Kiosk Hwy 101 Sequim, WA	Blyn (upper)	Cultural/Historical tourism	H	H	M	M	H	L
Scenic Pullout: Parking and Restrooms	Blyn (upper)	Infrastructure and tourism facilities	H	H	M	M	H	L
Social & Community 70-72 Zaccardo Road Sequim, WA	Blyn (upper)	Vulnerable populations, essential facility Offices and records	M	H	M	M	L	H
Tribal Campus Water Tower & Infrastructure 238 Chicken Coop Road Sequim, WA	Blyn (upper)	Critical Infrastructure – water supply	L	H	M	H	L	M
Tribal Wastewater Infrastructure – Upper Campus Sequim, WA 98382	Blyn (upper)	Wastewater treatment and disposal	M	M	H	H	L	M
Workshop Building (Gesdahl) 233 Zaccardo Road, Sequim, WA	Blyn (upper)	Cultural fabrication center	M	M	M	M	L	H
Carlsborg Mini Storage 292 Business Park Corp Unit A-3 Carlsborg, WA	Carlsborg	Tribal economic asset	L	M	M	L	L	L
Economic Development 257 Business Park Loop, Sequim, WA	Carlsborg area	Tribal economic infrastructure, future Data Center and records storage facility	L	M	M	L	L	L

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Dwelling 271020 Hwy 101 Sequim, WA	Casino subarea	Residence	H	H	M	L	H	M
Dwelling/Garage 192 Correia Sequim, WA	Casino subarea	Tribal storage - TGA	H	M	H	H	M	M
Fire Station 54 Sophus Road Sequim, WA 98382	Casino subarea	Critical facility	H	M	M	L	M	M
Dwelling (McPhearson) 110 Sophus Road, Sequim, WA	Casino subarea	Tribal Rental	H	M	M	M	M	H
Dwelling (McLaughlin) 270934 Highway 101 Sequim, WA 98382	Casino subarea	Tribal Rental	H	H	H	M	H	M
Rental Dwelling (Smith) 41 Enterprise Lane, Sequim, WA	Casino subarea	Moving to Fiorini; future resort property	H	M	M	L	M	H
Seven Cedars Resort - Casino Sequim, WA 98382	Casino subarea	Economic asset; essential facility	H	M	M	L	M	H
Seven Cedars Resort - Longhouse Market and Deli 271020 Hwy 101 Sequim, WA 98382	Casino subarea	Critical facility	H	M	M	L	M	H
Seven Cedars Resort – Wastewater System Sequim, WA 98382	Casino subarea	Wastewater infrastructure	H	M	H	H	L	M
Seven Cedars Resort – Water Tower Sequim, WA 98382	Casino subarea	Water supply and storage infrastructure	M	M	H	H	L	M
TGA Office 192 Correia Sequim, WA	Casino subarea	Tribal offices and records	M	M	H	H	L	M

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Dwelling 2203 Woodcock Rd. Sequim, WA 98382	Dungeness	Tribal Rental	L	M	H	L	L	M
Dwelling 5831 Woodcock Road Sequim, WA	Dungeness	NAHASDA Rental	M	H	H	L	M	M
Rental Dwelling (Craft) 182 Marinas Way, Sequim, WA	Dungeness	Tribal Rental; future 40 residences	H	M	M	L	L	M
Seven Cedars Resort – Cedars at Dungeness Golf Course Sequim, WA 98382	Dungeness	Economic asset; tourism, recreation, retail, food service	H	H	M	L	L	H
Cemetery Pump House Sequim, WA	Jamestown	Critical infrastructure	H	H	M	L	H	L
Dwelling (Donahue) 1272 Jamestown Rd Sequim, WA 98382	Jamestown	Tribal Rental	H	H	H	M	H	L
Jamestown Water System 1252 Jamestown Road, Sequim, WA	Jamestown	Critical Infrastructure	H	H	M	L	H	L
Garage Building 244 Knapp Road, Sequim, WA	Miller Peninsula	Tribal Rental	L	M	M	L	L	H
Olympic Discovery Trail Miller Peninsula	Miller Peninsula	Future; Transportation, tourism	L	L	M	M	L	H
Rental Dwelling (McFarland) 244 Knapp Road, Sequim, WA	Miller Peninsula	Tribal Rental	L	M	M	L	L	H
Shannon Property - Barn 274155 Highway 101, Sequim, WA	Miller Peninsula	Appurtenance	L	M	M	L	L	M

Property	Planning Area	Importance to Tribe	Flood	Severe Weather	Earthquake	Ground Failure or Erosion	Tsunami	Wildland Fire
Shannon Property Storage 274155 Highway 101, Sequim, WA	Miller Peninsula	Appurtenance	L	M	M	L	L	M
Dwelling – Modular (Shannon) 274157 Highway 101, Sequim, WA	Miller Peninsula	Tribal Rental	L	M	M	L	L	M
Dwelling (Shannon) 274155 Highway 101, Sequim, WA	Miller Peninsula	Residence	L	H	H	L	L	M
Shannon Property-Garage 274157 Highway 101, Sequim, WA	Miller Peninsula	Appurtenance	L	M	M	L	L	M

3.4.2 Vulnerability of Cultural or Sacred Sites

Cultural and historical assets include those facilities that augment or help define community character that, if lost, would represent a significant loss to the community. These include:

- carving building
- canoe shed
- totems and carved panels
- historic cultural and archaeological sites
- frybread shack and deck
- Tamanowas Rock Sanctuary
- Railroad Bridge Park/Dungeness River Audubon Center

Most of these are addressed in Table 3.5. Tamanowas Rock Sanctuary is a sacred site to area indigenous peoples. The rock rises up more than 100 feet out of the forest east of Anderson Lake State Park. Jefferson Land Trust is serving as the bridge owner of the property for the period of a two-year loan from the Bullitt Foundation. Washington State Parks and the S'Klallam tribe are working to obtain funding to repay the loan and provide a long-range management plan for the property (Arnn, 2010). Tamanowas Rock is most vulnerable to human incursion, development and desecration and has withstood centuries of the area's natural hazards.

3.4.3 Future Development

The Tribe has several projects in the active, proposal or concept stages. These include:

Tribal Government Services

- Jamestown Family Health Center
  Status: Active Project
  Location: Sequim
  Hazards considered in planning and design: Earthquake

Cultural Preservation

- Donahue Property (Jamestown Community Center)
  Status: Active Project
  Location: Jamestown Beach
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion
- Jamestown Tribal Cemetery, Columbarium Addition
  Status: Active Project
  Location: Jamestown, near beach area
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion
- Native Plant Garden
  Status: Active Project
  Location: Blyn
  Hazards considered in planning and design: Earthquake, Severe Weather, Wildland Fire
- Sweat Lodge (South Campus by SCS buildings)
  Status: Active Project
  Location: Blyn Upper
  Hazards considered in planning and design: Earthquake, Severe Weather, Wildland Fire
- Tamanowas Rock Sanctuary - Phase I
  Status: Active Project
  Location: Jefferson County, west of Chimacum, east of Anderson Lake State Park
  Hazards considered in planning and design: Preservation project. No construction expected.

7 Cedars Resort

- 7 Cedars Resort - Master Plan, Hotel and Resort
  Status: Proposed Project
  Location: Casino Subarea
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion, Wildland Fire
- Cedars at Dungeness Golf Course - Master Plan, Renovations
  Status: Active Project
  Location: Dungeness
  Hazards considered in planning and design: Earthquake, Severe Weather, Wildland Fire

Natural Resources

- Dungeness River Audubon Center at Railroad Bridge

Status: Active Project
Location: Audubon/Dungeness River
Hazards considered in planning and design: Earthquake, Severe Weather, Flood/Erosion, Wildland Fire

- Lower Dungeness River Dike Modification Projects
  Status: Concept Project
  Location: Dungeness
  Hazards considered in planning and design: Earthquake, Severe Weather, Flood/Erosion, Wildland Fire
- Lower Dungeness River Restoration: Towne Rd
  Status: Concept Project
  Location: Dungeness
  Hazards considered in planning and design: Earthquake, Severe Weather, Flood/Erosion, Wildland Fire
- Meadowbrook Channel Restoration On Hold
- Rivers End - Phase 1
  Status: Active Project
  Location: Dungeness
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion

Infrastructure

- Blyn Transportation Network
  Status: Concept Project
  Location: Blyn Upper/Blyn Lower
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion, Wildland Fire
- Hwy 101 East Interchange
  Status: Active Project
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion, Wildland Fire
- Hwy 101 Scenic Pullout
  Status: Active Project
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion, Wildland Fire
- Hwy 101 West Interchange
  Status: Concept Project
  Location: Casino Subarea
  Hazards considered in planning and design: Earthquake, Tsunami, Severe Weather, Flood/Erosion, Wildland Fire

3.4.4 Climate Change

One issue facing nearly all coastal communities is climate change. It was defined by the US House of Representatives Committee on Energy and Commerce as:

> "...the natural or human-induced changes manifested in the local or regional environment (including alterations in weather patterns, land productivity, water resources, sea level rise, atmospheric chemistry, biodiversity, and ecological systems)

> that may alter the capacity of a specific region to support current or future social and economic activity or natural ecosystems" (US House Committee on Energy and Commerce, 2009).

Climate change could result in a variety of impacts to the Jamestown S'Klallam Tribe. Rising sea level could exacerbate coastal storm surge flooding, erosion, and tsunami impacts. Other areas of concern include agriculture, energy, forest health, human health, hydrology and water resources, fish, and urban stormwater infrastructure.

According to the Washington Climate Change Impacts Assessment (WACCIA), global climate models project increases in average annual Pacific Northwest temperature of 2.0°F by the 2020s, 3.2°F by the 2040s, and 5.3°F by the 2080s (compared to 1970-1999). Projected changes in annual precipitation, averaged over all models, are small (+1 to +2%), but some models project an enhanced seasonal precipitation cycle with changes toward wetter autumns and winters and drier summers (Climate Impacts Group, University of Washington, 2009).

WACCIA reports that April 1 snowpack is projected to decrease by 28 percent statewide by the 2020s, and 59 percent by the 2080s relative to the historical average from 1916 through 2006. This will cause shifts in seasonal streamflow. Fish spawning may be impacted if stream levels reduce spawning access. Additionally, changes in ocean temperature and acidity could result in negative impacts to shellfish in the area.

Potential projects related to climate change have not been separated out from those related to flooding, erosion, or other categories. The hazards are likely to remain similar to those previously experienced, but the rate and severity of their occurrences could increase. Many actions that mitigate naturally occurring hazards will also mitigate climate change-caused hazards. Actions that reduce individual and corporate emissions of greenhouse gasses will, in the long term, help to reduce the continuing impacts of climate change. The Washington State Department of Ecology provides a list of climate change related resources on their website at http://www.ecy.wa.gov/climatechange/ipa_resources.htm.

4 Flood

The following flood hazard profile includes a description of the hazard, the location, extent and probability of the hazard and previous occurrences of flood damage not due to tsunami.

4.1 Hazard Description

The primary flooding hazards in the study area are riverine and coastal flooding, along with channel migration.

Riverine and coastal processes result in flooding as a result of heavy precipitation into rivers and streams, or by winds or barometric high tides in large lakes and oceans, and erosion from channel migration of rivers and streams.

Rainfall-Runoff Floods: Runoff flooding is the most common type of flood. They usually result from weather systems that have prolonged rainfall associated with them.

The rainfall intensity, duration, distribution, and geomorphic characteristics of the watershed all play a role in determining the magnitude of a flood.

Coastal Floods: Coastal floods, or storm surges, occur when the ocean is driven inland above the high-tide level onto land that is normally dry. Often, heavy surf conditions driven by high winds accompany a storm surge adding to the flooding water's destructive force.

The meteorological parameters conducive to coastal flooding are low atmospheric pressure, strong winds (blowing directly onshore or along the shore with the shoreline to the right of the direction of the flow), and winds maintained from roughly the same direction over a long distance across the open ocean (also called "fetch").

Communities that are situated on low-lying coastal lands with gradually sloping bathymetry near the shore and exposure to strong winds with a long fetch over the water are particularly susceptible to coastal flooding.

Channel Migration: River channels can move, or migrate, laterally across their floodplains. Channel migration can occur gradually, as a river erodes one bank and deposits sediment along the other. Channel migration can also occur as an abrupt shift of the channel to a new location, called an avulsion, which may happen during a single flood event. Channel migration represents a different type of flood hazard and can endanger properties located outside of the regulatory floodplain

The channel migration zone (CMZ) is the area where the active channel of a stream is prone to movement over time. CMZs, also known as "floodway fringe" areas, are generally considered to be spatially equivalent to the 100-year flood plain.

Both coastal and riverine flooding impact the Jamestown S'Klallam Tribal lands as discussed in the following sections.

4.1.1 Location

FEMA flood zones are indicated in yellow on Figure 1. The primary riverine flooding hazards are associated with the Dungeness River and its tributaries. The draft *Clallam County Hazard Mitigation Plan*, January 2010, indicates that recent studies show a trend of increasing peak flows for the Dungeness and Elwha rivers in Clallam County between 1924 and 2002. Much of the Clallam, Elwha and Dungeness tidal areas may be impacted by high tides and river flooding.

Coastal Flooding

Coastal flooding is an issue effecting most of the shoreline as indicated in yellow on Figure 1. This area includes Sequim Bay, at the head of which the Jamestown S'Klallam Tribe has its Tribal governmental campus. High tides and storm-driven waters cause damage along the shoreline and tidelands. Storms surge up the Strait and converge on north Puget Sound (Figure 5). Residents report that preserving natural barriers, such as native vegetation and driftwood logs left on the shoreline, helps to reduce coastal flooding and erosion.

Dungeness River

The Dungeness River flows north 30 miles and drops 3,800 feet from the Olympic Mountains to the Strait of Juan de Fuca. The Dungeness River basin has a fall rain/spring snowmelt hydrology. Peak flows occur with fall rains, winter rain on snow, and less frequently spring runoff. Development is concentrated along the lower 10 miles of the river (Rot & Edens, 2008). "*The Dungeness River may cause major flooding of roads and farm lands, with swift and deep flood waters running though some residential areas. Major Damage due to erosion of river banks is also possible"* (National Weather Service, 2008).

The Tribe owns riparian property along the Dungeness River at three locations from the river mouth to river mile 7, and a small tideland area in Dungeness Bay. Tribal citizens harvest fish and shellfish from Dungeness Bay for ceremonial, subsistence and commercial purposes (Jamestown S'Klallam Tribe, 2007).

River's End is located at the mouth of the Dungeness River. River's End structures were built in the floodway and CMZ. The US Army Corps of Engineers (USACE) built a dike in the 1960s to prevent channel migration on the east side of the river. A berm was built on the west side to protect residents at low flow, but was overtopped, undermined, or washed way during higher flows. One residence has been flooded eight times in seven years (GeoEngineers, Inc., 2004). Since 2001, Clallam County, Washington Department of Fish and Wildlife, and Jamestown S'Klallam Tribe have purchased land and decommissioned houses; the remaining homes and infrastructure are at high risk (Rot & Edens, 2008).

> *Levees have been identified as the greatest single factor altering physical river processes.*
>
> *~ US Department of Interior, Bureau of Reclamation*

Several major levees and large bank structures occur along the banks of the lower 10 miles of the Dungeness. These levees and structures were built in order to reduce flooding and erosion threats. However, these structures may have contributed to the increased frequency of flooding over the past 20 years (Rot & Edens, 2008). These levees constrict channel movement and stream flow, thereby increasing the velocity and depth of flood flows. The levees reduce channel complexity by restricting the recruitment of woody debris and reduce groundwater contribution to the river. They have been identified as the greatest single factor altering physical river processes (U.S. Department of Interior, Bureau of Reclamation, 2002). Additionally, levees can increase downstream erosion and scouring by increasing velocity and modifying the direction of flow, adding more sedimentation to the system. The Tribe participated in a 2009 study along with Clallam County entitled, *Dungeness River Comprehensive Flood Hazard Management Plan*. This study evaluated each levee and made recommendations for appropriate actions. The Tribe's priority, in keeping with the findings of this study, is to promote floodplain restoration in the lower Dungeness River.

The *Dungeness River Comprehensive Flood Hazard Management Plan* was a project listed for the Tribe in the *2004 Clallam County Hazard Mitigation Plan.* This planning project was completed and the Tribe is prepared to continue to put forth effort to restore the Lower Dungeness River area.

Jimmycomelately Creek – Lower Sequim Bay Estuary Restoration

The Jimmycomelately Creek project, listed in the *2004 Clallam County Hazard Mitigation Plan,* is an example of a successful mitigation project. A century of logging, road development, commercial development, railroad construction, dredging, wetland drainage/fill, diking, residential development, and stream relocation and channelization have eliminated wetlands, impacted fish habitat and reduced floodplain function of the Jimmycomelately Creek (JCL) and Lower Sequim Bay Estuary (Shreffler, Rot, Geiger, & Gibboney, 2003). The JCL was moved over 100 years ago by farmers looking to cultivate valley soil. Out of its floodplain, the creek could not naturally dissipate excess water during high flows.

In the mid-1990s, the Jamestown S'Klallam Tribe, the Clallam Conservation District, Clallam County and others began to address declining fish populations and increased flooding on the south Sequim Bay estuary and JCL. The restoration project took three years and cost six million dollars to complete. The JCL channel was widened and designed to meander in a stable manner through freshwater and intertidal areas. The new stream channel, within an area roughly 1,700 feet long and 350 feet wide, is now approximately 3,490 feet long. Flooding has largely been remedied (U.S. Environmental Protection Agency, 2009). However, until FEMA remaps the floodplain, the extent of the current threat is unknown.

4.1.2 Extent

The extent (i.e. magnitude or severity) of the flood hazard is measured in this plan by using historical events, the *Washington State Hazard Mitigation Plan* and the *Clallam County Hazard Mitigation Plan*. Based on these factors and using the criteria established in Table 3.2 the Jamestown S'Klallam Tribal lands have a **critical** extent of flooding.

4.1.3 Impact

Flooding impacts could include inability to reach neighboring communities, loss of property and infrastructure, damage to critical facilities, and loss of homes. Approximately 5,000 residents in Clallam County have been temporarily isolated due to floodwaters overtopping State roads (GeoEngineers, Inc., 2004).

According to the *Washington State Hazard Mitigation Plan*; since 1956, Clallam and Jefferson Counties have experienced serious flooding resulting in major damage and a Presidential Disaster Declaration about every seven years. Additionally, since 1989, more than three million dollars in Stafford Act disaster assistance funds have been provided to Region Two for repairs to public facilities following flood events (*Washington State Hazard Mitigation Plan)*. According to the *Clallam County Hazard Mitigation Plan,* flooding damages occurring since November 1990 have totaled approximately $800,000; and $250 million in damages occurred in neighboring Jefferson County (Jefferson County Department of Community Development, 2006).

4.1.4 Probability

Based on the *Washington State Hazard Mitigation Plan, Clallam County Hazard Mitigation Plan*, Jefferson and Clallam County documents and past historical events the probability of future occurrences of hazard events is **high** for flooding and **moderate** for erosion from channel migration. Table 3.3 defines criteria used for determining high probability, as the hazard is present with a high probability of occurrence within the calendar year. Event has up to 1 in 1 year change of occurring. Moderate

probability is defined as the hazard is present with a moderate probability of occurrence within the next three years. Event has up to 1 in 3 years chance of occurring.

4.1.5 Previous Occurrences

Dungeness River flood damage was chronicled in the *2009 Dungeness River Comprehensive Flood Hazard Management Plan.* The following information comes from that plan:

- The Federal Emergency Management Agency (FEMA) keeps records of all claims made by federal flood insurance policyholders. The information is tabulated on a community basis. The Lower Dungeness Basin is part of the community of Clallam County in the program, and figures are not broken out specific to the Dungeness. The cumulative payments to Clallam County since the inception of the program in 1979 through December 31, 2002 amount to $863,250.42.
- A private landowners group, the Dungeness Meadows Dike Committee, spent over $75,000 on levee and river maintenance between the years 1981 and 1986.
- In 1986, the County spent $2,800 on repair of the Dungeness Dike and $12,000 on road repairs associated with the flood damages from the January 18-20, 1986 storm.
- Two houses were destroyed by flooding in the Dungeness since 1988 – one on Kinkade Island and one across from the May Road area. One of the access bridges to Kinkade Island was washed out in the 2002 flood. Several property owners in the Rivers End area have reported repeated damage. Bank erosion downstream from the Highway 101 Bridge on the Kaiser Road properties has damaged wellheads and outbuildings. Extensive erosion has occurred along Taylor Cutoff Road, the west bank downstream from the Railroad Bridge, and other scattered sites throughout the lower river.
- Areas at high susceptibility to erosion are reported in the 2002 Bureau of Reclamation Report.

The following information was taken from the Washington State Hazard Mitigation Plan.

Federal Disaster 757, January 1986; flooding and severe storms in **Clallam**, **Jefferson** and King Counties, caused $5 million in damages to public facilities.

Federal Disaster 883, November 1990; severe storms and flooding occurred during Veteran's Day and Thanksgiving weekend holidays in Chelan, **Clallam**, Grays Harbor, Island, **Jefferson**, King, Kitsap, Kittitas, Lewis, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, Whatcom, and Yakima counties. Widespread, major flooding occurred in both Western and Eastern Washington. Rivers with major flooding were the Skagit and Nooksack Rivers. The Thanksgiving weekend floods set record flood stages on the Naselle, Wilapa, Hoh Calawah, **Dungeness**, Skokomish, Cedar, Snoqualmie, Snohomish, Stillaguamish, Chiwawa, Wenatchee, Elwha, and Klickitat Rivers. Many levees were overtopped and damaged. Hundreds of homes evacuated; much of the city of Snoqualmie evacuated. Thousands of acres of farmland flooded and evacuated; on Fir Island, Skagit County, 167 homes were flooded by eight feet of water; on Eby Island, Snohomish County, only people with elevated homes stayed. Two people died; more than 500 cattle perished. Damage estimated at $250 million.

Federal Disaster 1079, December 1995; flooding and wind in the counties of Chelan, **Clallam**, Clark, Cowlitz, Grays Harbor, Island, **Jefferson**, King, Kittitas, Lewis, Mason, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum, Whatcom, and Yakima. More than 850 homes damaged or destroyed; one death reported. Stafford Act disaster assistance provided $45.9 million and the Small Business Administration disaster loans approved $4.3 million.

Federal Disaster 1159, December 1996; saturated ground combined with snow, freezing rain, rain, rapid warming and high winds within a five-day period to cause flooding impacting Adams, Asotin Benton, Chelan, **Clallam**, Clark, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island,

Jefferson, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Whatcom, Whitman and Yakima counties. Twenty-four deaths; $140 million (estimate) in insured losses; 250,000 people lost power. More than 130 landslides occurred between Seattle and Everett, primarily along shorelines. Interstate 90 at Snoqualmie pass closed due to an avalanche. Stafford Act disaster assistance provided $83 million and Small Business Administration loans approved $31.7 million.

Federal Disaster 1499, November 2003; heavy rainfall caused severe flooding in Chelan, **Clallam**, Grays Harbor, Island, **Jefferson**, King, Kitsap, Mason, Okanogan, Pierce, San Juan, Skagit, Snohomish, Thurston and Whatcom counties. Most severe flooding took place along the Skagit River. Record flood levels were set on the Skagit River at Concrete, Sauk River, and Stehekin River. More than 3,400 people were evacuated. Thirty-three homes were destroyed, 112 homes had major damage, with property damage estimated at $30 million. Numerous federal, state and county roads were damaged by landslides and floodwaters. Stafford Act disaster assistance provided to date $5.8 million and the Small Business Administration disaster loans approved $2.1 million.

Federal Disaster 1641, January 2006; flooding, landslides and mudflows seriously impacted state and local transportation infrastructure across the state as well as damaging homes and businesses.

4.2 Community Participation in the National Flood Insurance Program

The function of the National Flood Insurance Program (NFIP) is to provide flood insurance at a reasonable cost to homes and businesses located in floodplains. In trade, communities agree to regulate new development and substantial improvement to existing structures in the floodplain; and to build safely above flood heights to reduce future damage to new construction. The program is based on mapping areas of flood risk, and requiring local implementation to reduce flood damage primarily through requiring the elevation of structures above the base (100-year) flood elevations.

The Jamestown S'Klallam Tribe is not specifically involved in the NFIP, but is part of the Clallam County NFIP coverage. The Tribe will continue to coordinate with the County on NFIP issues and implementation.

Table 4.1 describes the Flood Insurance Rate Map (FIRM) zones.

Table 4.1 - FIRM Zones

FIRM Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet, average depths of inundation are shown but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.

FIRM Zone	Explanation
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
C	Areas of minimal flooding.
D	Areas of undetermined, but possible, flood hazards.

Development permits for all new building construction, or substantial improvements, are required in all A, AO, AH, A-numbered Zones. Flood insurance purchase may be required in flood zones A, AO, AH, A-numbered zones as a condition of loan or grant assistance. An Elevation Certificate is required as part of the development permit. The Elevation Certificate is a form published by the Federal Emergency Management Agency required to be maintained by communities participating in the NFIP. According to the NFIP, local governments maintain records of elevations for all new construction, or substantial improvements, in floodplains and to keep the certificates on file.

Elevation Certificates are used to:

- Record the elevation of the lowest floor of all newly constructed buildings, or substantial improvement, located in the floodplain.
- Determine the proper flood insurance rate for floodplain structures
- Local governments must insure that elevation certificates are filled out correctly for structures built in floodplains.

Certificates must include:

- The location of the structure (tax parcel number, legal description and latitude and longitude) and use of the building.
- The Flood Insurance Rate Map panel number and date, community name and source of base flood elevation date.
- Information on the building's elevation.
- Signature of a licensed surveyor or engineer.

4.3 Repetitive Loss Properties

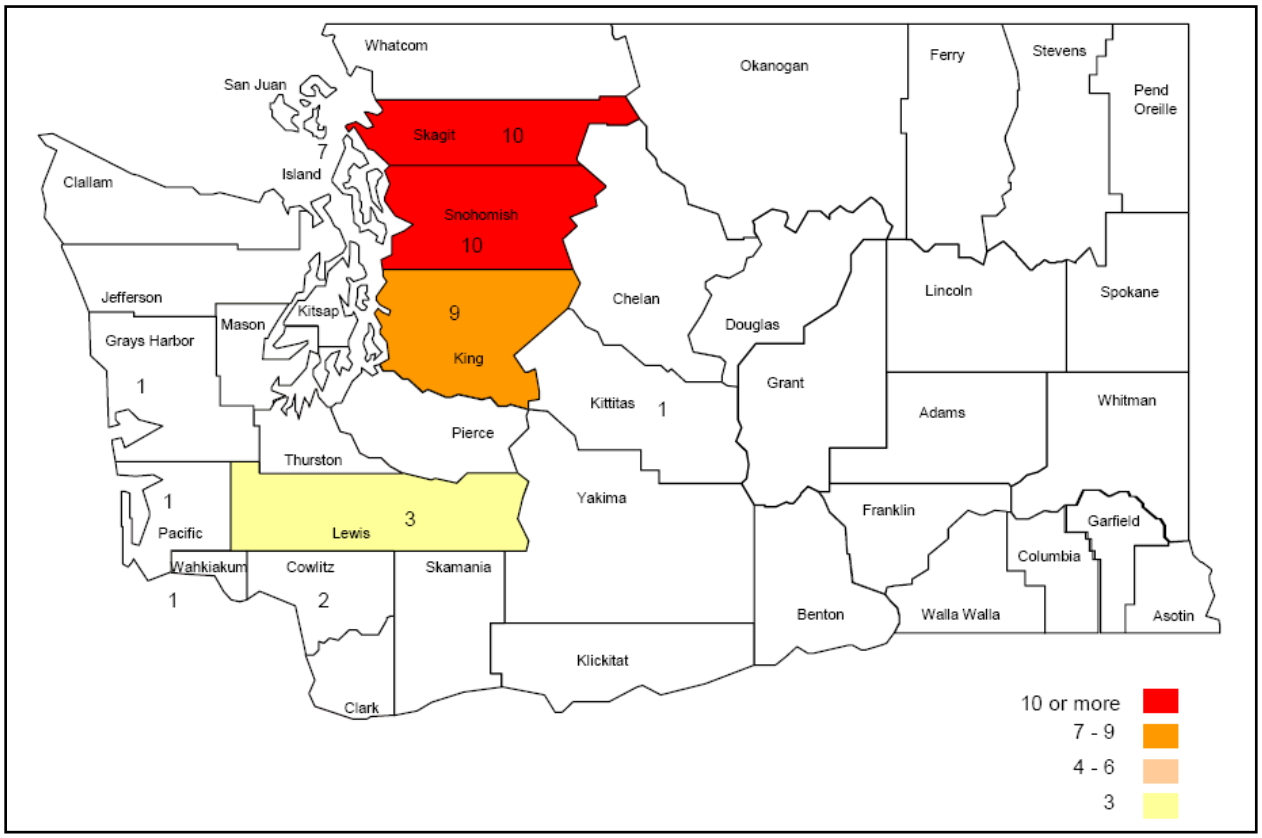
The risk assessment in all plans approved after October 1, 2008 must also address NFIP-insured structures that have been repetitively damaged in floods. Under NFIP guidelines, repetitive loss structures include any currently insured building with two or more flood losses (occurring more than ten days apart) greater than $1,000 in any 10-year period since 1978.

States provide communities with information on historic floods throughout the state so communities will know what type of damage has occurred (even if it didn't occur within that particular community). The State keeps an up-to-date list of repetitive loss properties and provides communities with the most current list. The FEMA Regional Office provides this information.

FEMA also maintains a national list of properties that comprise the "Repetitive Loss Target Group". These are repetitive loss properties that have either experienced four or more losses with the characteristics above, or have had losses that cumulatively exceed the property value of the building.

Repetitive loss properties are those with at least two losses in a rolling ten-year period and two losses that are at least ten days apart. Specific property information is confidential, but the State DCRA Floodplain Coordinator related that within the Clallam and/or Jefferson counties there have been ***zero*** properties that meet the FEMA definition of repetitive loss. See Figure 2 for counties with repetitive loss properties in Washington State.

Figure 2 - Counties with Severe Repetitive Flood Loss Properties



Source: *Washington State Hazard Mitigation Plan,* November 2007

4.4 Water Resource Restoration

Although no FEMA-defined repetitive loss properties are located in Clallam or Jefferson County, repeated flooding of the area's waterways does occur and is a serious concern of the Jamestown S'Klallam Tribe and other local governments. Streambed restoration is a priority for the Tribe in keeping with the Jimmycomelately Creek project and the goals of the *2009 Dungeness River Comprehensive Flood Hazard Management Plan.*

5 Landslide and Erosion

The following landslide and erosion hazard profile includes a description of the hazard, the location, extent and probability of the hazards and previous occurrences of landslide and erosion damage.

5.1 Hazard Description

5.1.1 Landslide

A landslide refers to the downward and outward movement of slope-forming materials reacting under the force of gravity. Landslides usually consist of natural soil, rock, artificial fill, or a combination of those items. The term covers a range of events including mudflows, mudslides, rock flows, rockslides, debris flows, debris avalanches, debris slides, and earth flows.

Landslides are most likely to occur where certain combinations of geologic formations are present. For example, groundwater can accumulate and zones of weakness can develop when layers of sand and gravel lay above less permeable silt and clay layers. In the Puget Lowland, for example, this combination is common and widespread; glacial outwash, often Esperance Sand or gravel, overlies the fine-grained Lawton Clay or Whidbey formation (Washington Emergency Management Division, 2007).

Landslides typically occur on slopes and in areas where they have taken place before. Areas historically subject to landslides include the Columbia River Gorge, the banks of Lake Roosevelt, the Interstate 5 corridor, U.S. 101 Highway corridor along the Pacific Coast and from the coast to Olympia, in the Cascades, Olympics, and Blue Mountains and along Puget Sound coastal bluffs (Washington Emergency Management Division, 2007).

Determining probability of the future landslide events in specific locations is difficult because so many factors can contribute to the cause of a landslide or ground failure. Scientists from the US Geological Survey continue to test a pilot system that warns of increased risk of landslides in Seattle and surrounding areas during certain heavy rainfall events (Washington Emergency Management Division, 2007)

Landslide Types

The four types of landslides are classified according to the type of material and movement involved.

Slump: This type of landslide occurs when groundwater concentrates near compact silt or clay in the lower bluff area; the existence of a saturated zone can cause the sandy-soiled, upper bluff to subside. Slumps tend to leave a distinctive mid-bluff bench; examples are found in the Alki, Fort Lawton, and Golden Gardens areas of Seattle, Scatchet Head on Whidbey Island, and the Thordyke Bay area of Jefferson County.

Debris Flows: Excessive groundwater combined with focused surface runoff can turn a landslide into a debris flow which typically accelerates with downslope movement. They are capable of great destruction because their weight and viscosity enable them to move logs and buildings; even a small debris flow can smash through the wall of a frame house or drop uprooted trees through a roof.

Submarine Landslides: These landslides are apt to go unnoticed unless they trigger noticeable water waves or damage submarine utilities.

Falls and Topples: A fall is when rock or other material breaks free from a cliff or slope and moves by free fall, bouncing or rolling. Falls typically occur on steep slopes with a slope angle between 45 to 90

degrees; making fall movement very fast. Topples are a mass of rocks or soil rotating forward from a slope at a point that is below the mass' center of gravity. The movement is tilting without collapse but if the mass pivots far enough, a fall may result.

Geology, precipitation, topography and cut and fill construction practices all influence landslide activity. They often are the result of seismic activity, flooding, volcanic activity, heavy precipitation, construction work, or coastal storms. Landslides can also trigger secondary hazards, such as tsunamis and flooding.

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 moss wasting in the upper watersheds and forest lands. 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; buy 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. 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 failure originate from side cast, or a combination of factors are involved.

Underlain by sedimentary and volcanic rocks, the Olympic Mountains have both slope stability conditions and a variety of landslide types that occur throughout the state.

Some lower valleys without glaciers have thick sections of weathered soil and bedrock comparable to those in the Southwest Washington landslide province. In such areas, earth flows are extensive. Adjacent valleys with glaciers have soils comparable in age, texture, physical properties and behavior to the sediments in the Puget Lowlands.

5.1.2 Erosion

Erosion is a process that involves the wearing away, transportation and movement of land. Erosion rates can vary significantly as erosion can result quickly from a flash flood, coastal storm, or other event, or quite slowly from long-term environmental changes. Erosion is a natural process but human activity exacerbates its effects.

Erosion is measured as a rate, with respect to either a linear retreat (i.e., feet of shoreline recession per year) or volumetric loss (i.e., cubic yards of eroded sediment per linear foot of shoreline frontage per year). Erosion rates are not uniform, and vary over time at any single location. Annual variations are the result of seasonal changes in wave action and water levels.

Erosion is caused by coastal storms and flood events; changes in the geometry of tidal inlets, river outlets, and bay entrances; man-made structures and human activities such as shore protection structures and dredging; long-term erosion; and local scour around buildings and other structures. Further information on coastal erosion can be found in FEMA-55, Coastal Construction Manual, FEMA's *Multi-hazard Identification and Risk Assessment, Evaluation of Erosion Hazards* published by The Heinz Center, and *Coastal Erosion Mapping and Management*, a special edition of the Journal of Coastal Research. (FEMA, 386-2)

Erosion Types

Coastal erosion: Coastal erosion is the wearing a way of coastal land. It is commonly used to describe the horizontal retreat of the shoreline along the ocean, or the vertical down cutting along the shores of the Great Lakes. Erosion is considered a function of larger processes of shoreline change, which include erosion and accretion. Erosion results when more sediment is lost along a particular shoreline than is redeposited by the water body. Accretion results when more sediment is deposited along a particular shoreline than is lost. When these two processes are balanced, the shoreline is said to be stable. In assessing the erosion hazard, it is important to realize that there is a temporal, or time aspect, associated with the average rate at which a shoreline is either eroding or accreting. Over a long-term period (years), a shoreline is considered to be eroding, accreting or stable. A hazard evaluation should focus on the long-term erosion situation. However, in the short-term, it is important to understand that storms can erode a shoreline that is, over the long-term, classified as accreting, and vice versa.

Riverine erosion: Riverine erosion is the long-term process whereby river banks and riverbeds are worn away. This erosion is often initiated by river bank failure or heavy rainfall; increasing the sediment loads. As the sediment load increases, fast-flowing rivers will erode their banks downstream. Eventually, the river becomes overloaded or velocity is reduced, leading to sediment deposition further downstream or in dams and reservoirs. The deposition may eventually lead to the river developing a new channel, this is known as avulsion.

Erosion undercutting the Railroad Bridge

Erosion occurring along the west Railroad Bridge side channel, a tributary of the Dungeness River, currently threatens the Tribally-owned Railroad Bridge trestle. This bridge was erected in 1915 and is currently part of the Olympic Discovery Trail; a multi-use, non-motorized trail system across the North Olympic Peninsula. The Olympic Discovery Trail is a tourist attraction and important to the regional economy, as well as providing a multi-use trail for commuters, bicycling, jogging and walking that benefits visitors and residents alike.

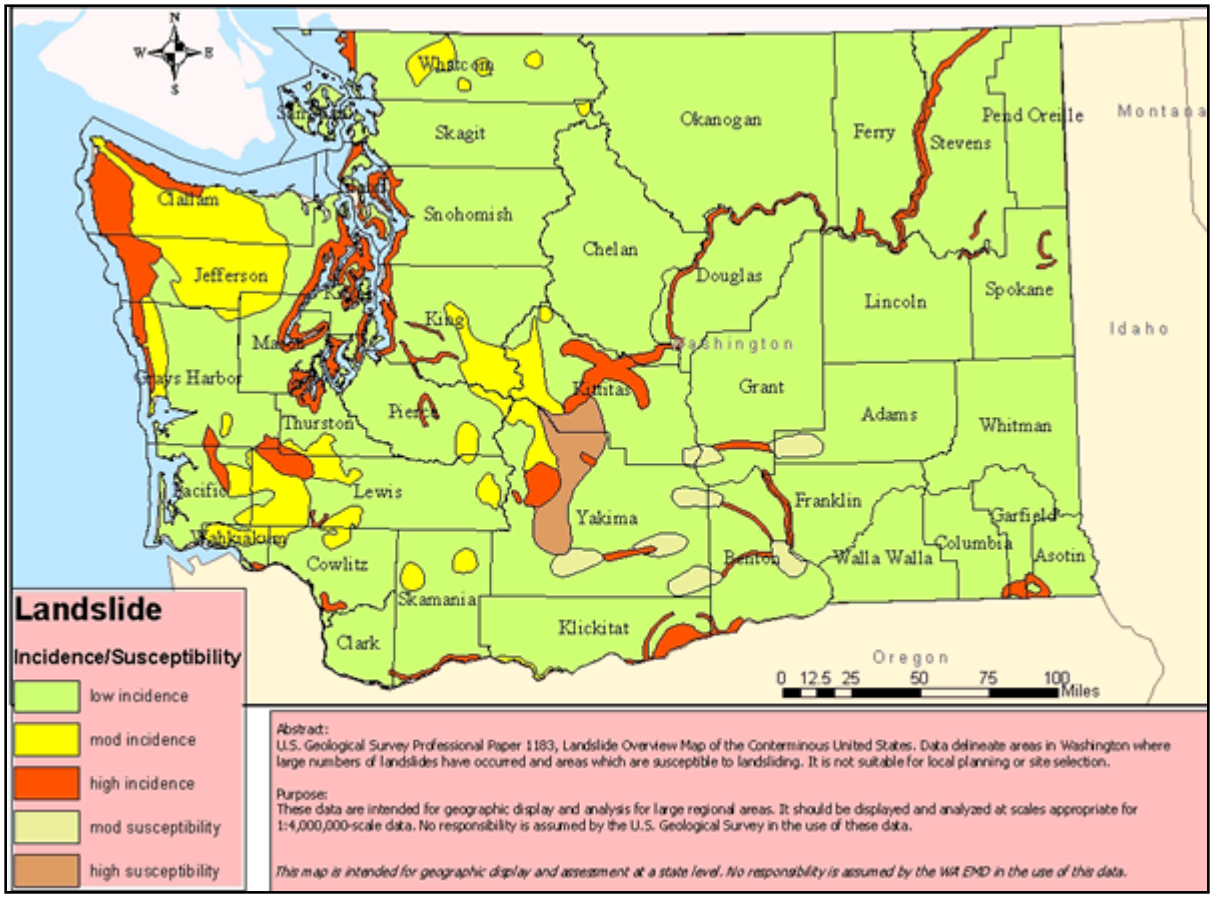
The primary threat to the bridge is the possibility of the Dungeness River avulsing west of the current bridge and through the existing trestle thereby undermining them (Rot B. , 2009). A secondary issue is the erosion of the fill caused by an expanding arm of the west side channel (Rot B. , 2009). While it is impossible to predict where these channels will meander, it is a priority to protect the Railroad Bridge.

5.1.3 Location

Landslides and bluff erosion have damaged or threatened residences in developments located in Clallam Bay-Sekiu, Port Angeles, and in the County east of Port Angeles (GeoEngineers, Inc., 2004). Figure 3,

taken from the *Washington State Hazard Mitigation Plan* shows the areas in Washington State that are most susceptible to landslides.

Figure 3 - Areas Most Vulnerable to Landslides



Source: *Washington State Hazard Mitigation Plan,* November 2007

Riverine and coastal erosion along the shoreline and waterways as discussed in sections 4.1.1 and 5.1.2.

5.1.4 Extent

The extent (i.e. magnitude or severity) of the landslides/erosion hazard is measured in this plan by using historical past events and the *Washington State Hazard Mitigation Plan*, 2007. Based on these factors and using criteria established in Table 3.2 the Tribe has a **limited** extent of landslides/erosion. This means that less than 10% of property would be damaged and injuries would likely not threaten lives.

5.1.5 Impact

Landslides have the greatest impact on infrastructure; historically the U.S. 101 Highway corridor and State Route 112 have been subject to landslides. While the actual areas subject to landslides are limited and generally remote the impact of landslides could affect the entire region. Previously, heavy rains triggered a landslide event resulting in the two month closure of a 500-foot section of State Route 112, the only route from Port Angeles to Neah Bay. Highway 101 provides the only route from Sequim to Port Angeles where the hospital is located. Closure of travel corridors can create extreme hardship for Tribal citizens cut off from relatives, employment, and medical facilities.

Impacts of erosion include damage to historical structures, residences and other facilities. Roadways and trails may be undercut and become impassible.

5.1.6 Probability

The *Washington State Hazard Mitigation Plan*, 2007, identifies Clallam and Jefferson counties as having a high incidence of landslides as indicated in Figure 3, based on descriptions of events and damages, as well as, information from the Washington Department of Natural Resources and the U.S. Geologic Survey. However, the Tribe has a **moderate** probability of landslide as it is not located in the areas most prone to landslides. Erosion is currently occurring at various locations throughout the Tribal lands, so the probability of future occurrences of erosion is **high**. Table 3.3 defines criteria used for determining moderate probability, as the hazard is present with a moderate probability of occurrence within the next three years. Event has up to 1 in 3 years chance of occurring. Table 3.3 defines criteria used for determining high probability, as the hazard is present with a high probability of occurrence within the calendar year. Event has up to 1 in 1 year change of occurring.

5.1.7 Previous Occurrences

Federal Disaster 1499, October 2003; heavy rainfall caused severe flooding and landslides in 15 counties. Landslides or ground failures caused temporary closures on nine state highways. Among the most significant events were a series of mud and rockslides that closed State Route 20 between Skagit and Okanogan Counties, and a sinkhole on State Route 112 in **Clallam County** that isolated the Makah Indian Reservation. Other landslide-related transportation problems included debris over the roadway or lodged beneath bridges on U.S. Highway 101 in **Jefferson** and Mason Counties, U.S. Highway 2 in Snohomish County, and State Route 410 in Pierce County. Stafford Act disaster assistance provided to date totals $5.8 million and the Small Business Administration disaster loans approved $2.1 million.

Undercutting at the west end of the Railroad Bridge

In December 2009, rain and high water caused serious erosion at the west end of the trestle bridge at the Railroad Bridge Park. That is where the trestle anchors at the asphalt trail. The embankment on the south side of the trestle caved in enough to start undercutting the concrete slab that anchors the last wooden section. The bank in that location is very unstable.

6 Severe Weather

The following severe weather hazard profile includes a description of the hazard, the location, extent and probability of the hazards and previous occurrences of severe weather damage.

6.1 Hazard Description

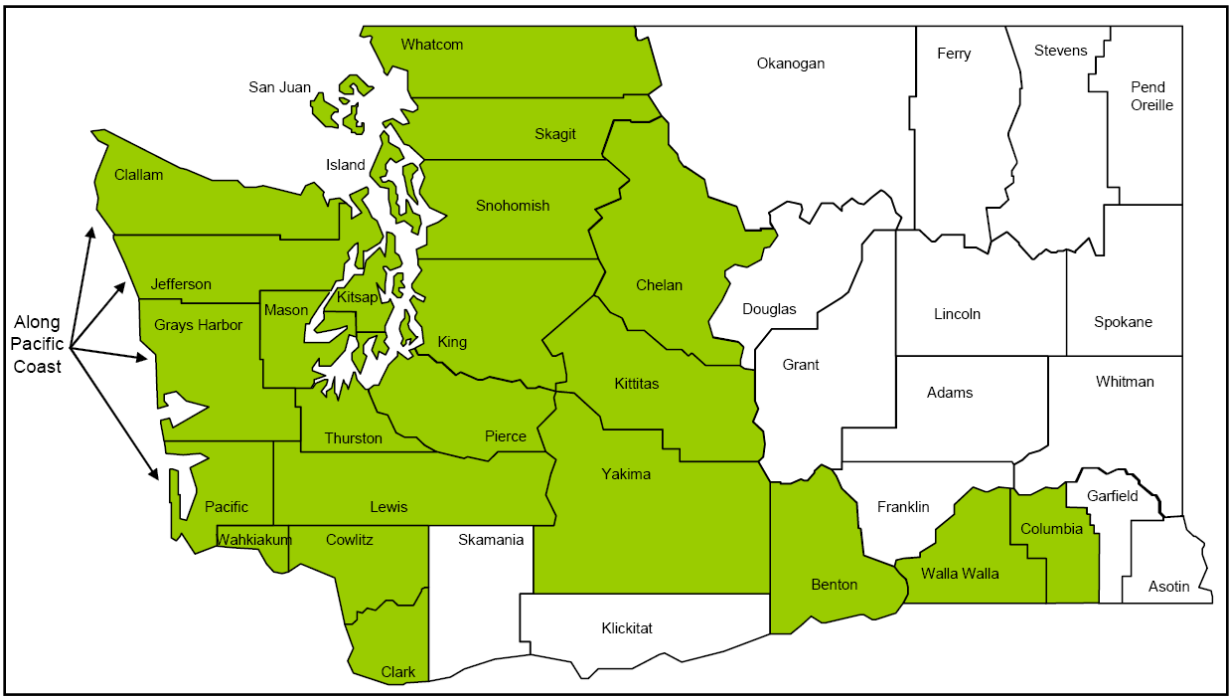
Severe storms in Washington occur from November to March, generally when storms move from the ocean in a southwest to northeast direction. December and January, the wettest months, precipitation is frequently recorded on 20 to 25 days or more each month. The range in annual precipitation is from about 20 inches in an area northeast of the Olympic Mountains to 150 inches along the southwestern slopes of these mountains. Snowfall is light in the lower elevations and heavy in the mountains.

The following severe storm elements are considered for this profile:

- High winds – Storms with sustained winds of 40 miles per hour or gusts of 58 miles per hour or greater, not caused by thunderstorms, expected to last for an hour or more.
- Winter storm – A storm with significant snowfall, ice and/or freezing rain; the qualtity of precipitation varies by elevation.
- Drought – Drought is a prolonged period of low precipitation severe enough to reduce soil moisture, water and snow levels below the minimum necessary for sustaining plant, animal, and economic systems. A natural part of the climate cycle, droughts can reduce water supply, threaten crops that rely on natural precipitation, and increase the threat of wildfires.

Areas most vulnerable to high winds are those affected by a strong pressure difference from deep storms originating over the Pacific Ocean; an outbreak of very cold, Arctic air originating over Canada; or air pressure differences between western and eastern Washington that primarily affect the Columbia River Gorge, Cascade Mountain passes, ridges and east slopes, and portions of the Columbia Basin.

Figure 4 - Counties Most Vulnerable to High Winds

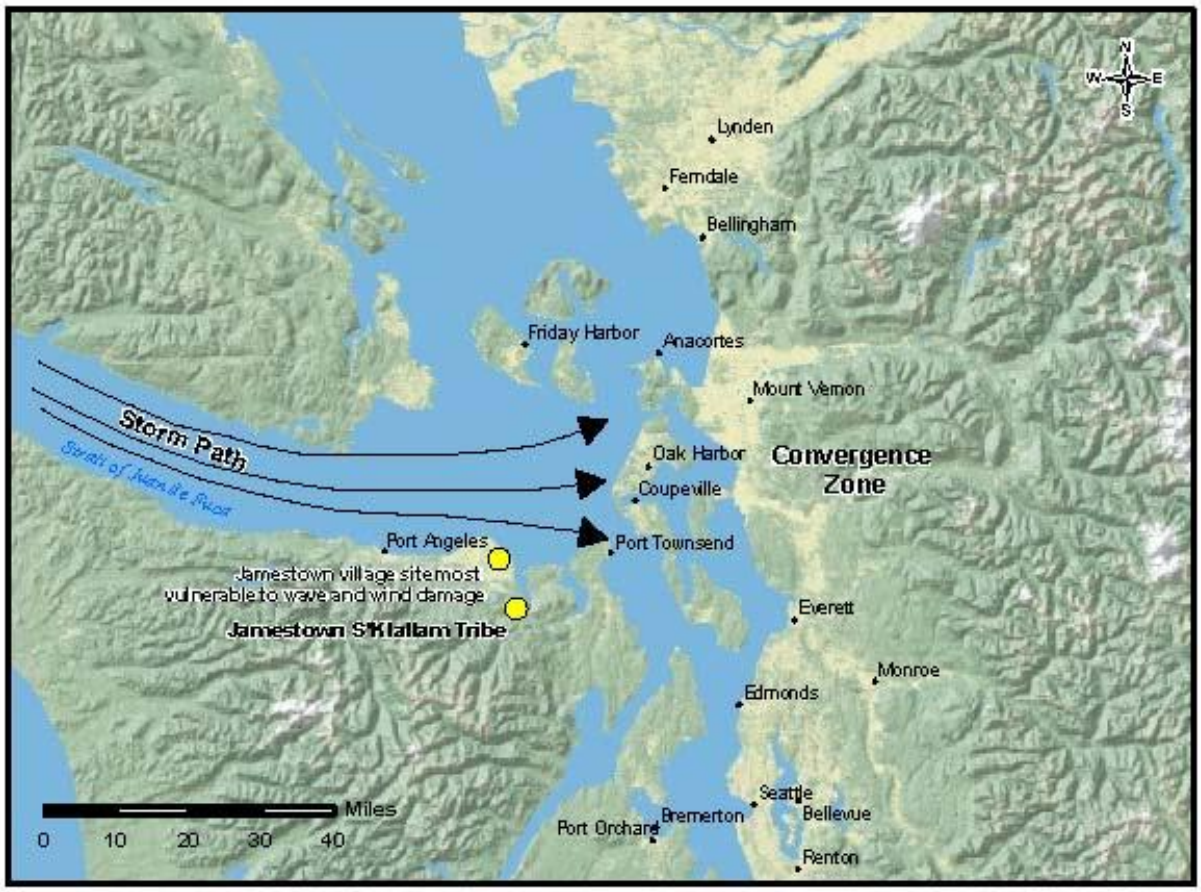


Source: ***Washington State Hazard Mitigation Plan, 2007***

6.1.1 Location

The hazards of severe weather impacts the Tribe on a regional basis as storms move from the ocean in a southwest to northeast direction. Severe weather may trigger landslides, erosion, flooding, and channel migration. 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 (GeoEngineers, Inc., 2004). Areas particularly vulnerable to severe storms include the coastline along the bays and straits, and the Lake Crescent area. Storms move up the straits and converge at the eastern end as shown in Figure 5.

Figure 5 - Storm Convergence Zone



Drought is also an area-wide concern.

6.1.2 Extent

Severe weather could result in a **critical** situation; injuries and/or illness could result from high winds and/or winter storms. The *Washington State Hazard Mitigation Plan, 2007* identifies Clallam and Jefferson counties as areas vulnerable to high winds.

Drought events are generally **limited** in extent for the Jamestown S'Klallam Tribe. However, they do cause hardship for the Tribe when water demand exceeds availability as happened in the summer of

2009. At that time, irrigation had to be terminated and extreme conservation measures were recommended. New vegetation that had been planted died.

6.1.3 Impact

Severe weather hazard events often result in damage with the greatest impacts on human activities; including transportation infrastructure and power-lines.

Drought impacts include:

- Agricultural – Drought threatens crops that rely on natural precipitation.
- Water supply – Drought threatens supplies of water for irrigated crops and for communities.
- Fire hazard – Drought increases the threat of wildfires from dry conditions in forest and rangelands.

6.1.4 Probability

During most of the year, the prevailing winds are from the southwest or west. The frequency of northeasterly winds is greatest in the fall and winter. Extreme wind velocities can be expected to reach 50 mph at least once in two years; 60 to 70 mph once in 50 years; and 80 mph once in 100 years.

While droughts cannot be predicted with accuracy, it is estimated in the State hazard plan that severe or extreme drought can be expected approximately 5 percent of the time.

6.1.5 Previous Occurrences

Federal Disaster 1159, January 1997; saturated ground combined with snow, freezing rain, rain, rapid warming and high winds within a five-day period produced flooding and landslides. This severe weather resulted in more than 130 landslides between Seattle and Everett, primarily along shorelines. Interstate 90 at Snoqualmie Pass was closed due to avalanche. Twenty-four deaths; $140 million (estimated) in insured losses; 250,000 people lost power. Stafford Act disaster assistance provided $83 million; the Small Business Administration approved $31.7 million in loans. Impacted counties included: Adams, Asotin, Benton, Chelan, **Clallam**, Clark, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, **Jefferson**, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Whatcom, and Yakima.

In the past century, Washington State has experienced a number of drought episodes, including several that lasted for more than a single season – 1928 to 1932, 1992 to 1994, and 1996 to 1997.

7 Tsunami

The following tsunami hazard profile includes a description of the hazard, the location, extent and probability of the hazards and previous occurrences of tsunami damage.

7.1 Hazard Description

A tsunami is a series of waves most often caused by an earthquake beneath the seafloor. If a large earthquake displaces the seafloor near Washington's coast, the first waves could hit the shore within minutes. The waves can kill and injure people and cause severe property damage.

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, according to the *Clallam County Hazard Mitigation Plan*, 2007.

7.1.1 Location

Tsunamis can occur at any time of the day or night, under any and all weather conditions, and in all seasons. Beaches open to the ocean, by bay entrances or tidal flats, and the shores of coastal rivers are especially vulnerable to tsunamis.

An earthquake occurring along the Cascadia Subduction Zone could produce a 10-foot wave along the Pacific coastline of the Peninsula (Gottlieb, 2010).Tsunami mapping, shown on Figure 1, indicates that the areas from Dungeness Bay through the Jamestown Tidelands, as well as areas at the mouth and head of Sequim Bay, are at risk for tsunami.

7.1.2 Extent

Tsunami could result in a **critical** situation; injuries and/or illness could result from flooding and coastal erosion.

The *Washington State Hazard Mitigation Plan, 2007* identifies Clallam and Jefferson counties as areas vulnerable to Tsunami.

7.1.3 Impact

A tsunami hazard event could result in damage with the greatest impacts on human activities; including transportation infrastructure, homes, and power-lines. The Jamestown Beach well head located on John Adams's property – parcel number 033005509040 – is in the area vulnerable to tsunami. That well serves residences throughout the community which would be without drinking water in the event that the wellhead was compromised. In tsunamis, there is always the potential for injury or loss of life.

7.1.4 Probability

The Clallam County region is susceptible to both distance tsunamis, which occur out under the ocean, and nearby tsunamis which can be generated in the Cascadia subduction zone immediately offshore of Oregon and Washington. Although there may be three or more hours of advance warning of a tsunami generated by a distant source, a Cascadia subduction zone event may reduce response time to less than one hour.

Great earthquakes (magnitude 8 to 9) and tsunamis have repeatedly rocked the Pacific Northwest. Catastrophic earthquakes and tsunamis have occurred along Washington's coast at least six times in the

past 7,000 years; about every 300 to 600 years. There is a good chance that another earthquake will occur offshore within the next 100 years.[1]

7.1.5 Previous Occurrences

Tsunamis that impacted coastal Washington included:

- 1964: An earthquake in Alaska triggered a tsunami that reached a height of almost 13 feet (4 meters) at Seaview, Washington.
- 1700: A powerful earthquake (magnitude 8 to 9) and tsunami hit Washington's coast 300 years ago.

[1] Washington State Department of Ecology, http://www.ecy.wa.gov/programs/sea/coast/waves/tsunami.html

8 Wildland Fire

8.1 Hazard Description

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, 2003). The Jamestown S'Klallam Tribe owns the fire station in Blyn which is operated by Clallam County.

Blyn fire station

A recent study by Headwaters Economics found that Clallam County has the highest existing risk of catastrophic losses in the event of a major wildfire in all of Washington and is fifth highest among all 413 counties of the 11 states of the western United States. Jefferson County is ranked 58th in the West in the same study. The area is adjacent to the Olympic National Forest and is an area where the timber industry is an important contributor to the economy.

The study also ranks Clallam County second in Washington and twenty-fifth in the counties of the western states for potential future risk as the result of increasing human development in wildfire-prone native ecosystems, an area that firefighters call the wildland-urban interface (WUI).[2]

8.1.1 Location

Wildland and Urban Interface fire can occur throughout the study area. As cool moist air moves inland from the Pacific Ocean, the mountains "dam" clouds, and uplift causes the moisture to drain out of the air and fall as precipitation in the western portion of the Peninsula. On the other side of the rainshadow, the Dungeness Watershed where much of the Jamestown S'Klallam Tribe's land holdings are located is considered one of Washington State's driest watersheds west of the Cascade Mountains. The Sequim Bay area is particularly prone to wildland urban interface fires.

Natural fuels in the region range from grasslands which are very dry in the summer months to thick stands of timber with a dense understory (Figure 6).

[2] http://www.pc.ctc.edu/coe/wui.htm

8.1.2 Extent

Wildland fire or wildland urban interface fire could result in a **critical** situation; injuries and/or illness could result from windblown fires combined with the area's naturally dry conditions.

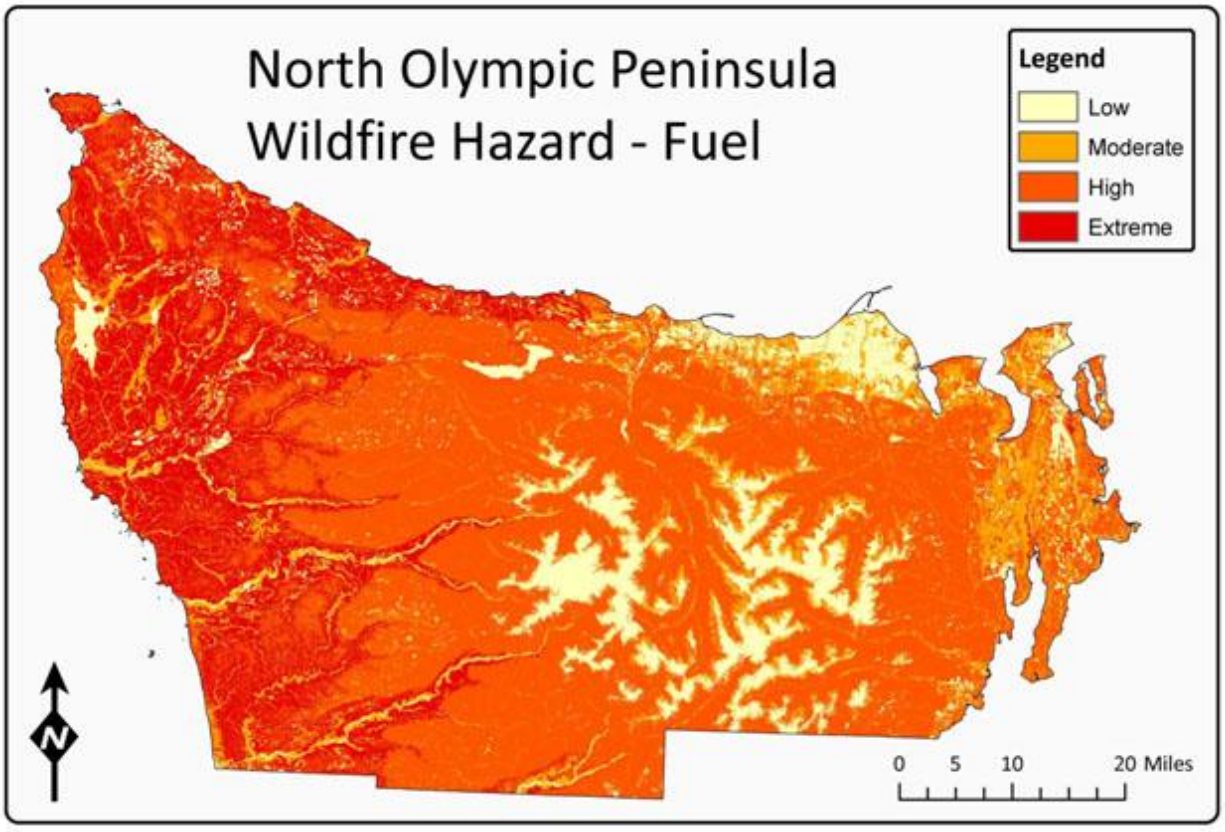
8.1.3 Impact

A wildfire hazard event could result in damage with the heavy impacts on human activities. Economic impacts could include a reduction in tourism, closure of casino, store, fuel station and other businesses at risk for fire. Many residences could also be at risk as well as the Tribal Campus, health facilities, and cultural resources. Injury or loss of life may result from wildland/wildland urban interface fires.

8.1.4 Probability

Figure 6, taken from the *Wildfire Hazard Assessment and the Wildland Urban Interface of the Olympic Peninsula,* indicates that the area west of Sequim Bay has a low to moderate wildfire hazard based on types of naturally occurring fuel, while the head of the bay area where the Tribal Campus, casino, and fuel station are located, has a high risk of wildfire since it is abutted by stands of thick timber. Fire danger increases throughout the area from May through October annually.

Figure 6 - North Olympic Peninsula Wildfire Hazard – Fuel



8.1.5 Previous Occurrences

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.

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. [3]

[3] Information on previous fire occurrences is derived from the *Clallam County Hazard Mitigation Plan*, January 2010

9 Hazards Not Profiled in the 2010 Multi-Hazard Mitigation Plan

The decision was made not to profile volcano and avalanche hazards in the Jamestown S'Klallam Tribe's 2010 MHMP.

9.1 Volcanoes

The nearest volcanoes that could present a threat to the community are Mount Rainier and Mount Saint Helens. Information on the USGS website indicates that Mount Rainier, the highest peak in the Cascade Range (14,410 feet) is considered a dormant volcano. It carries more glacial ice on its slopes than any other mountain in the 48 contiguous United States. Theoretically, this could melt and cause flooding in a cataclysmic eruption.

Since 1820, Mount Rainier has experienced one to two small eruptions, small debris flows and debris avalanches. Prehistoric deposits indicate that over the past 10,000 years destructive eruptions of hot lava and rock debris have melted snow and glacier ice and triggered debris flows with the consistency of wet concrete that surged down the river valleys originating on Rainier. No indication exists that these flows have extended beyond the lowlands east of Tacoma and south of Seattle or beyond the present margin of Puget Sound.

While devastating, this doesn't present a direct threat to Jamestown S'Klallam Tribal lands.

Mount Saint Helens erupted on May 18, 1980, at which time its elevation went from 9,677 feet down to 8,364 feet in one cataclysmic event. In the early 1980s, plumes of steam, gas, and ash often occurred on Saint Helens that could be seen from Portland, Oregon, 50 miles to the south. It is estimated that Mount Saint Helens has erupted two to three times in the past 200 years. It is described as having continuous intermittent volcanic activity since 1820.

Ash from the 1980 eruption did not reach Jamestown S'Klallam Tribal lands and it is not believed that the volcano poses a direct threat to the Tribe.

9.2 Avalanches

An avalanche is made up of loose snow or ice that abruptly descends downhill. Damage extent is related to the type of avalanche, volume of snow and debris, force and velocity of the flow and the avalanche path. Most commonly, avalanches are characterized as loose snow or slab avalanches. Other types include cornice collapses, ice falls, and slush avalanches.

As they descend, avalanches tend to accrue additional material such as mud, rocks, trees, and debris. Avalanches are present in the high alpine areas of the Olympic Mountains, but do not impact the areas inhabited by the Jamestown S'Klallam Tribe. Therefore, avalanches are not considered a potential hazard in this plan.

10 Mitigation Strategy

The following mitigation strategy was developed with input from Tribal leaders, the public, and state and county hazard planners. It begins with analysis of the Tribe's ability to accomplish its mitigation goals and goes on to list goals and projects to mitigate each of the identified hazards. Each project was prioritized taking into account feasibility, cost and benefit to the Tribe. It is understood that it will be necessary to perform a complete benefit/cost analysis to apply for and obtain FEMA hazard mitigation funding for eligible projects. The goals developed for this plan are similar to those in the 2004 Clallam County plan, the multi-jurisdictional plan that is the predecessor to the *2010 Jamestown S'Klallam Multi-Hazard Mitigation Plan*; however, the current goals are more hazard specific, than those of the County plan.

10.1 Tribal Code

The Jamestown S'Klallam Tribe is a national leader in self-governance, having been actively involved in the Self-Governance initiative since its inception in 1988. Funding that is annually negotiated and received through Self-Governance is used to support numerous Tribal programs and activities. Some of these services include housing; cultural enhancement; natural resources and harvest management; water resources planning; aquaculture planning and other business development activities (www.jamestowntribe.org).

Several aspects of the Tribe's Code have been updated since the Clallam County Plan was adopted in 2004. The Tribe is in the process of adding new titles to the Tribal Code. Currently in draft form, Title 21, Tribal Building and Development Code, affirms the tenets of the International Building Code (IBC), including guidelines about fire resistance-rated systems, fire protection systems for building of varying sizes, and structural design. The Tribe has the authority to require permits for building on its lands.

Additionally, following a disaster, Section 27.02.06 of the Tribal code makes clear the procedures for emergency construction and other activities directly related to the emergency. Title 27 is the Tribal Environmental Policy Act (TEPA). Additional titles are being developed potentially including zoning regulations.

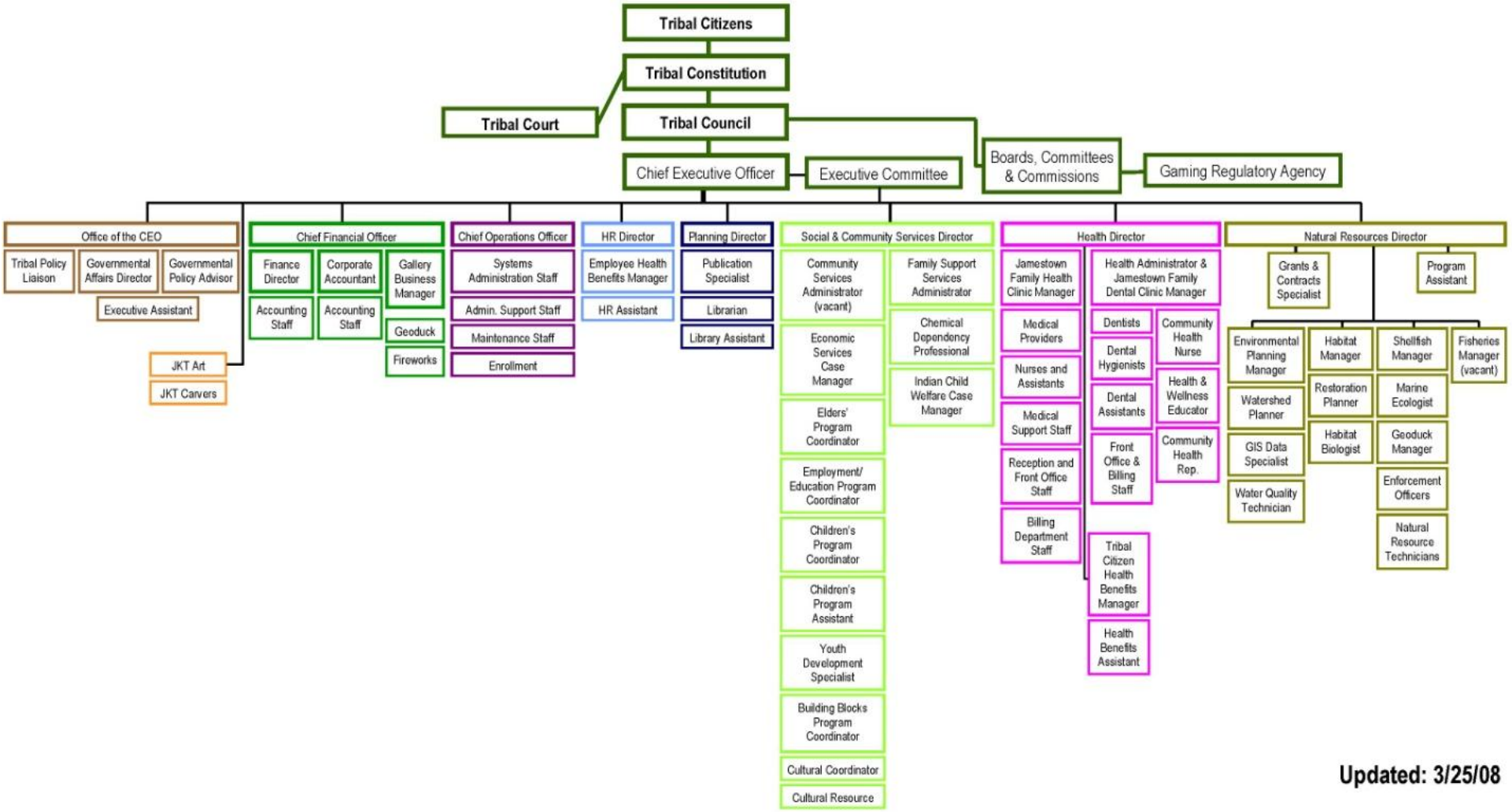
A document predating the 2004 County Hazard Plan that regulates development in potentially hazard prone areas is the Tribe's *Coastal Zone Management Plan* (Jamestown S'Klallam Tribal Council, 2003). This document offers guidance on the types of development that can occur in the coastal zone as well as detailing their regulation through the life of the activity under the oversight of the Tribal staff, Executive Director and the Tribal Council.

> *"The self-governance concept provides our Tribe the flexibility to restructure our programs and address Tribal priorities and needs. Through Self-Governance the Tribe is able to re-design programs to meet Tribally-specific needs without diminishing the United States' trust responsibility to Indian peoples and Tribes."*
>
> *~ Jamestown S'Klallam Tribal Self-Governance Mission Statement*

10.2 Resources and Capacity

As described in section 2.5, the Tribe owns several businesses that contribute to their capacity to complete hazard mitigation projects. Not only do these businesses bring revenue to the Tribe, they include construction and health-related business that could actively participate in mitigation projects.

Figure 7 - Tribal Government Organizational Chart



The Tribe's organizational chart, Figure 7, indicates the breadth of administrative and technical capacity that the Tribe can bring to bear on hazard mitigation. It is important to note the departments specializing in natural resources and the social and physical health of the Tribe's citizens as these are likely to be very involved with mitigation efforts. Additionally, there is more than adequate staff capacity for grant and project oversight and plan maintenance. These Tribal resources were in place and have not changed since the 2004 Clallam County plan was written.

10.3 Flood Mitigation

Previous flood mitigation projects from the *2004 Clallam County Hazard Mitigation Plan* included:

Project #2: Restore floodplain and estuarine functions of the lower Dungeness River. Complete a restoration plan for Lower Dungeness River area.

Outcome: The Tribe participated in a 2009 study along with Clallam County entitled, *Dungeness River Comprehensive Flood Hazard Management Plan*. This study evaluated each levee and made recommendations for appropriate actions. The Tribe's priority, in keeping with the findings of this study, is to promote floodplain restoration in the lower Dungeness River. This is taken forward in the 2010 project FLD-1: Lower Dungeness River floodplain restoration, described below.

Jimmycomelately Creek Bridge

Funding: USFWS, National Coastal Wetlands Conservation Grant, Washington Wildlife & Recreation Program Grant, Aquatic Lands Enhancement Account Grant, WA State Centennial Clean Water Fund, Governor's Salmon Recovery Funding Board, EPA Wetlands Grant, Clallam County, WRIA 17, JSTribe, WA Department of Ecology.

Project #4: Build the Jimmycomelately Bridge on Highway 101.

Outcome: Completed

Funding: WSDOT

10.3.1 Flood Mitigation Goals

Goal 1: Reduce or prevent future flood damage.

Goal 2: Increase public awareness.

10.3.2 Flood Mitigation Projects

FLD-1. Lower Dungeness River floodplain restoration

In keeping with the goals outlined in the 2009 *Dungeness River Comprehensive Flood Hazard Management Plan,* restoration of the lower river floodplain is a high priority for the Jamestown S'Klallam Tribe.

Goal:	Goal 1
Priority Level:	High
Timing:	1-5 years
Lead Entity:	Tribe, County, Washington Department of Fish & Wildlife
Cost:	Estimated: $10 Million
Potential Funding:	HMGP – Hazard Mitigation Grant Program NOAA/NWIFC—Pacific Coastal Salmon Recovery Program; USFWS– North American Wetlands\ Conservation Act & National Coastal Conservation Grant; US EPA—Wetland Protection Program, CWA Sections 106 & 319, Brownfields, and GIS Grants; US BIA—Watershed Projects; Jobs-in-the-Woods; USDA—Farm Service Agency, Conservation Reserve Enhancement Program; WA DNR—Washington Aquatic Lands Enhancement Account; WA Dept. of Ecology—Washington Centennial Clean Water Fund; WA IAC—Washington State Wildlife & Recreation Fund; WA SRFB—Washington State Salmon Recovery Fund; WSU Cooperative Extension.

FLD-2. Tribal Document Protection

Store and backup paper and electronic copies of records offsite to avoid loss in case of flood, fire or other natural disaster.[4]

Goal:	Goal 1
Priority Level:	High
Timing:	1 year
Lead Entity:	Tribe
Cost:	$300,000
Potential Funding:	ANA-SEDS

FLD-3. Participate with the County in Dike and Levee Inventory

In keeping with the goals outlined in the 2009 *Dungeness River Comprehensive Flood Hazard Management Plan,* restoration of the lower river floodplain is a high priority for the Jamestown S'Klallam Tribe. To this end, the Tribe will work cooperatively with Clallam County in the dike and levee inventory.

Goal:	Goal 1
Priority Level:	High
Timing:	1-5 years
Lead Entity:	County
Cost:	Staff time
Potential Funding:	Grants

[4] Jamestown S'Klallam Tribal Library Preservation Survey, funded by the Institute for Museum and Library Services Professional Assistance Grant #NG-02-0400039-04.

FLD-4. Structure Elevation and/or Relocation

A list of homes, commercial structures and critical facilities that are in danger of flooding and/or erosion should be identified and mitigation projects for elevating and/or relocating the structures determined.

Goal:	Goal 1
Priority Level:	Variable
Timing:	Variable
Lead Entity:	Tribe
Cost:	To be Determined
Potential Funding:	HMGP

FLD-5. Coordinate with Clallam County on the implementation of the NFIP Program

Through the NFIP, property owners in participating communities are able to insure against flood losses. By employing wise floodplain management, a participating community can protect its citizens against much of the devastating financial loss resulting from flood disasters. Careful local management of development in the floodplains results in construction practices that can reduce flood losses and the high costs associated with flood disasters to all levels of government. Increased participation in NFIP is encouraged. This might entail such measures as including more stringent regulations for new construction in designated flood zones and disseminating information about the NFIP program to property owners who might benefit from NFIP flood insurance.

Goal:	Goals 1, 2
Priority Level:	High
Timing:	Within one year and ongoing
Lead Entity:	FEMA, Tribe, County
Cost:	To be Determined
Potential Funding:	FEMA, Tribe

FLD-6. Encourage Native Vegetation along Shoreline

Encourage the formation of dunes along the shoreline through the reintroduction and protection of dune grasses native to the area. Planting native vegetation encourages soil or sand retention which will provide a natural barrier to flooding.

Goal:	Goals 1, 2
Priority Level:	High
Timing:	Ongoing
Lead Entity:	Tribe
Cost:	Relatively low cost
Potential Funding:	PDM, USDA

FLD-7. Public Education

Increase public knowledge about mitigation opportunities, floodplain functions, emergency service procedures, and potential hazards. This would include advising property owners, potential property owners, and visitors about the hazards. In addition, dissemination of a brochure or flyer on flood hazards in Jamestown S'Klallam Tribal lands and ways to be prepared for such events should be developed and distributed to all households.

Goal: Goals 1, 2
Priority Level: High
Timing: Variable
Lead Entity: Tribe
Cost: Staff time
Potential Funding: PDM

10.4 Landslide/Erosion Mitigation

No landslide/erosion mitigation projects were listed for the Tribe in the 2004 Clallam County plan.

10.4.1 Landslide/Erosion Mitigation Goals

Goal 1. Reduce or prevent future landslide/erosion damage.

10.4.2 Landslide/Erosion Mitigation Projects

L/E-1. Limit removal of vegetation in areas prone to ground failure. Plant ground cover where appropriate.

Removal of vegetation from slopes can compromise the integrity of the soil and lead to landslides. Requests to remove vegetation should be handled through a permit process that involves an assessment of the area for landslide hazard.

Goal: Goal 1
Priority Level: High
Timing: Variable
Lead Entity: Tribe and Clallam County
Cost: Staff time
Potential Funding: Minimal cost

L/E -2. Railroad Bridge protection

Develop and implement a long-term solution to the riverine erosion threatening the bridge's trestle. The most viable long term solution is to extend the trestle west. Replace and extend the trestle from the bridge to the side of the channel, utilizing a design that would accommodate river movement (Rot B. , 2009).

Goal: Goal 1
Priority Level: High
Timing: One year
Lead Entity: Tribe
Cost: $100,000
Potential Funding: Grants

L/E-3. Encourage residents and land owners to leave natural erosion barriers, such as driftwood logs on the shore, in place to reduce shoreline erosion.

Write articles for Tribal publications and local news outlets explaining the benefits of natural erosion barriers. Make this type of information a part of a concerted hazard mitigation public information campaign.

Goal:	Goal 1
Priority Level:	High
Timing:	Variable
Lead Entity:	Tribe
Cost:	Staff time, public awareness campaign.
Potential Funding:	To be Determined

10.5 Severe Weather Mitigation

No severe weather mitigation projects were listed for the Tribe in the 2004 Clallam County Plan.

10.5.1 Severe Weather Mitigation Goals

Goal 1: Reduce severe weather damage.

Goal 2: Increase public awareness

Goal 3: Prevent future severe weather damage.

10.5.2 Severe Weather Mitigation Projects

SW-1. StormReady

Research and consider instituting the National Weather Service program of "StormReady". Attend Clallam County training on StormReady preparedness.

StormReady is a nationwide community preparedness program that uses a grassroots approach to help communities develop plans to handle all types of severe weather—from tornadoes to tsunamis. The program encourages communities to take a new, proactive approach to improving local hazardous weather operations by providing emergency managers with clear-cut guidelines on how to improve their hazardous weather operations.

To be officially StormReady, a community must:

1. Establish a 24-hour warning point and emergency operations center.
2. Have more than one way to receive severe weather forecasts and warnings and to alert the public.
3. Create a system that monitors local weather conditions.
4. Promote the importance of public readiness through community seminars.
5. Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.
6. Demonstrate a capability to disseminate warnings.

Specific StormReady guidelines, examples, and applications also may be found on the Internet at: http://www.nws.noaa.gov/stormready.

Goal:	Goal 1, 2, 3
Priority Level:	Moderate
Timing:	Ongoing
Lead Entity:	Clallam County, State, Tribe
Cost:	Staff time, in-kind services
Potential Funding:	Minimal cost

SW-2. Conduct severe weather awareness activities.

Activities may include events such as Winter Weather Awareness Week and Flood Awareness Week, and provide information on preparedness. Information could be disseminated at Health Fair, Elders luncheons, annual picnic or General Citizenship meetings.

Goal:	Goal 1, 2, 3
Priority Level:	High
Timing:	2010
Lead Entity:	Tribe, County
Cost:	Staff time, in-kind services
Potential Funding:	Tribe – minimal costs

SW-3. Develop alternate water supplies to provide reserve water sources to be used in the event of drought or water shortage.

Goal:	Goal 1
Priority Level:	High
Timing:	2011
Lead Entity:	Tribe
Cost:	$1,000,000
Potential Funding:	HUD, USDA, Rural Community Assistance Corporation (RCAC)

SW-4. National Oceanic and Atmospheric Administration (NOAA) Weather Radio

Provide NOAA Weather Radio receivers to Tribal residents of Jamestown Beach for continuous weather broadcasts and warning tone alert capability.[5] These receivers should also be located at the Casino, Tribal offices, and Clinic.

Goal:	Goal 1, 2, 3
Priority Level:	Moderate
Timing:	One to five years
Lead Entity:	Tribe
Cost:	$20-$200 per radio
Potential Funding:	Tribe, Grants

[5] **NOAA Weather Radio All Hazards** (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

Working with the Federal Communication Commission's (FCC) Emergency Alert System , NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with Federal, State, and Local Emergency Managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes 1000 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Information on receivers is available at http://www.nws.noaa.gov/nwr/nwrrcvr.htm. Broadcasts are found in the VHF public service band at these seven frequencies (MHz):

162.400	162.425	162.450	162.475	162.500	162.525	162.550

Source: http://www.nws.noaa.gov/nwr

SW-5. Incorporate weather resistant building construction materials and practices in to new construction and retrofits/remodels.

Goal:	Goal 1
Priority Level:	Moderate
Timing:	Ongoing
Lead Entity:	Tribe
Cost:	Variable
Potential Funding:	Tribe

10.6 Tsunami Mitigation

No tsunami mitigation projects were listed for the Tribe in the 2004 Clallam County plan.

10.6.1 Tsunami Mitigation Goals

Goal 1: Increase public awareness

Goal 2: Protect critical infrastructure in inundation zone

Goal 3: Improve emergency response capabilities

10.6.2 Tsunami Mitigation Projects

T-1. Continue to participate in TsunamiReady with Clallam County.

Training and public education are an important component of this program. TsunamiReady helps community leaders and emergency managers be better prepared to save live through better planning, education and awareness. Information on TsunamiReady can be found at http://www.tsunamiready.noaa.gov/. Staff and residents should participate in Clallam County TsunamiReady training efforts.

Goal:	Goal 1
Priority Level:	High
Timing:	2010
Lead Entity:	Clallam County, Tribe
Cost:	Staff or volunteer time, In-kind services
Potential Funding:	Minimal cost

T-2. Advanced warning systems

Evaluate tsunami warning and alerting systems including sirens, NOAA weather Radio and Marine band. Clallam County has a warning system in place but not in the vicinity of the Tribal Campus. Coverage should be expanded. All Hazards Alert Broadcast (AHAB) Sirens are being installed with State funding. When sirens are installed in Tribal areas, the Tribe should commit to minor maintenance and participation in preparedness drills.

Goal:	Goal 1
Priority Level:	High
Timing:	One year
Lead Entity:	Clallam County, Tribe
Cost:	Minimal to tribe.
Potential Funding:	State

T-3. Protect or relocate wellhead at Jamestown Beach

Study and implement wellhead protection measures to ensure continued water supply for the Jamestown Beach community in the event of tsunami or extreme flooding.

Goal:	Goal 2
Priority Level:	High
Timing:	One year
Lead Entity:	Tribe
Cost:	To be Determined
Potential Funding:	CDBG-GP Grant, EPA Grants, USDA Rural Development Loans or Grants

10.7 Earthquake Mitigation

One previous earthquake mitigation project was listed for the Tribe in the *2004 Clallam County Hazard Mitigation Plan*:

Project #5:	Complete a seismic assessment of Jamestown S'Klallam Tribal facilities.
Outcome:	This project has not yet been completed and is brought forward as project #E-1.

10.7.1 Earthquake Mitigation Goals

Goal 1. Protect existing infrastructure against earthquake damage.

Goal 2. Educate the public about earthquake preparedness and precautions

10.7.2 Earthquake Mitigation Projects

E-1. Complete a seismic assessment of Tribal facilities and develop a strategy for improvements, if necessary.

Contract a structural engineering firm to assess Tribal buildings and facilities to determine their structural integrity and a strategy to improve their earthquake resistance, if necessary.

Goal:	Goal 1
Priority Level:	High
Timing:	2011
Lead Entity:	Tribe
Cost:	TBD
Potential Funding:	Tribe, FEMA, USDA, HUD

E-2. Nonstructural retrofits of critical facilities

Assess facilities and improve earthquake preparedness through such measures as installing bookshelf tie-downs, improving computer servers' resistance to earthquakes, installing furnace and boiler straps, and moving heavy objects to lower shelves, etc.

Goal:	Goal 1
Priority Level:	High
Timing:	2011
Lead Entity:	Tribe
Cost:	TBD
Potential Funding:	Tribe, FEMA, USDA, HUD

E-3. Public education

Conduct drills and educate for earthquake preparedness. Disseminate information on earthquake preparedness to residents, businesses, government offices, medical/dental clinics, and programs that serve vulnerable populations such as children and Elders.

Goal:	Goal 2
Priority Level:	High
Timing:	2010
Lead Entity:	Tribe
Cost:	TBD
Potential Funding:	Tribe

10.8 Wildland Fire/Urban Interface Mitigation

One fire mitigation strategy was included for the Tribe in the 2004 Clallam County plan.

Project #3: Acquire site and construct new Blyn Fire Station to minimize the vulnerability to hazards for Tribal facilities, as well as all east end residents of Clallam County.

Outcome: This project has been completed.

Funding: BIA, USDA, Loans

Blyn fire station

10.8.1 Wildland Fire Mitigation Goals

Goal 1: Reduce fire danger to the community.

Goal 2: Encourage the creation of firebreaks.

Goal 3: Reduce probability of loss of life from wildland fire.

Goal 4: Conduct outreach activities to encourage the use of FireWise techniques.

Goal 5: Public education on fire safety.

10.8.2 Wildland Fire Mitigation Projects

WF-1. Fuel reduction projects and defensible space around structures

Create safer corridors for access/egress by reducing fuel (trees) around homes and driveways and widening access roads. Remove fuel within the community around essential infrastructure such as communications towers, power lines, wastewater treatment facilities, evacuation routes and shelters, and emergency response facilities.

Additionally, fuel reduction projects (fire breaks) should be implemented around the Tribal community and governmental/enterprise campuses and facilities to reduce the possibility of a wildfire and to increase the health of the forest in a way similar to the natural cycle of burn-off and new growth.

Goal: Goals 1, 2, 3, 4
Priority Level: High
Timing: 1-5 years
Lead Entity: Tribe and County
Cost: To be Determined
Potential Funding: US Forest Service Grants

WF-2. Promote FireWise building design, siting, and materials for construction in the Vision Master Plan and Housing Programs.

FireWise training is offered by the County and would benefit the Tribe. The FireWise Program is designed to educate people about wildland fire risks and mitigation opportunities. It is part of a national program that provides information to land owners and developers.

Goal: Goals 1, 2, 3, 4
Priority Level: High
Timing: ongoing
Lead Entity: County and Tribe
Cost: Staff Time, Monetary Cost to be Determined
Potential Funding: ICDBG, US Forest Service, BLM

WF-3. Research and implement a hazard warning system.

Residents must have adequate warning of fires or other emergencies. Should be integrated with project T-2.

Goal: Goals 1, 3, 4
Priority Level: Moderate
Timing:
Lead Entity: Forest Service, Clallam County Fire District 3
Cost: TBD
Potential Funding: Forest Service, HUD, BLM

WF-4. Enhance public awareness of potential risk to life and personal property. Promote, and fund where possible, mitigation measures in the immediate vicinity of Tribal Citizens' individual properties.

Goal: Goals 1, 2, 3, 4, 5
Priority Level: Moderate
Timing: ongoing
Lead Entity: Tribe
Cost: TBD
Potential Funding: Forest Service, BLM

11 Plan Implementation and Maintenance

11.1 Plan Implementation

The Jamestown S'Klallam Tribal Council will be responsible for adopting the 2010 MHMP and all future updates or changes. This governing body has the authority to promote sound public policy regarding hazards. The Hazards Mitigation Plan will be assimilated into other Tribal plans and documents as they come up for review according to each plan's review schedule.

Table 11.1 - Jamestown S'Klallam Planning Documents

Document	Completed	Next Review
Jamestown S'Klallam Tribal Comprehensive Plan	2008	2015
Comprehensive Economic Development Strategy	Updated annually	June 2010
Housing Improvement Plan	2010	2011
Transportation Plan	2003	2011
Vision Master Plan (Land Use)	2008	Ongoing
Outdoor Recreation Plan	2005	April 2010
Utility Plan	2004	As needed
Watershed and Natural Resources Restoration Plans: Dungeness-Quilcene Water Resources Plan Tribal Watershed Plan	Dungeness: 1996	Ongoing

11.2 Monitoring, Evaluating and Updating the Plan

Section §201.7(c)(4) of the federal mitigation planning regulation requires that the plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

11.2.1 Monitoring the Plan

The Planning Director or designee is responsible for monitoring the plan. On an annual basis, he or she will seek a report from the agencies and departments responsible for implementing the mitigation projects in Chapter 10 of the plan. The compiled report will be provided to the Tribal Council as information and notice given to the public. A report outlining all five years of the plan monitoring will be included in the plan update.

The Tribe will continue to comply with all applicable Federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c), and will amend this plan whenever necessary to reflect changes in Tribal or Federal laws and statutes as required in 44 CFR 13.11(d).

11.2.2 Evaluating the Plan

The Planning Director or designee will evaluate the plan on an annual basis during the five-year cycle of the plan. Concurrent with the report above, the evaluation should assess, among other things, whether:

- The goals and objectives address current and expected conditions.
- The nature, magnitude and/or types of risks have changed.
- The current resources are appropriate for implementing the mitigation projects in Chapter10.
- There are implementation problems, such as technical, political, legal or coordination issues with other agencies.
- The outcomes have occurred as expected (a demonstration of progress or project completion).
- The agencies and other partners participated as originally proposed.

As part of the evaluation process, the Planning Director or designee will prepare a summary of projects that have been completed and closed out. This will be retained in electronic or hard copy files for use in plan updates.

11.2.3 Updating the Plan

The federal mitigation planning regulations at §201.7(C)(4) direct the update of Mitigation Plans.

Plans must be updated and resubmitted to FEMA for approval every five years in order to continue eligibility for FEMA hazard mitigation assistance programs. Plan updates must demonstrate that progress has been made in the past five years to fulfill commitments outlined in the previously approved plan. This involves a comprehensive review and update of each section of the plan and a discussion of the results of evaluation and monitoring activities described above. Plan updates may validate the information in the previously approved plan or may involve a major plan rewrite. It is expected that the plan will be updated as necessary to reflect changes in Tribal or Federal laws or statutes. A plan update may not be an annex to this plan; it must stand on its own as a complete and current plan. The Planning Director or designee will be responsible for the Plan update.

The schedule for the plan update is to start the following tasks before the end of the five-year cycle as depicted in Figure 8.

Figure 8 - Hazard Mitigation Planning Cycle

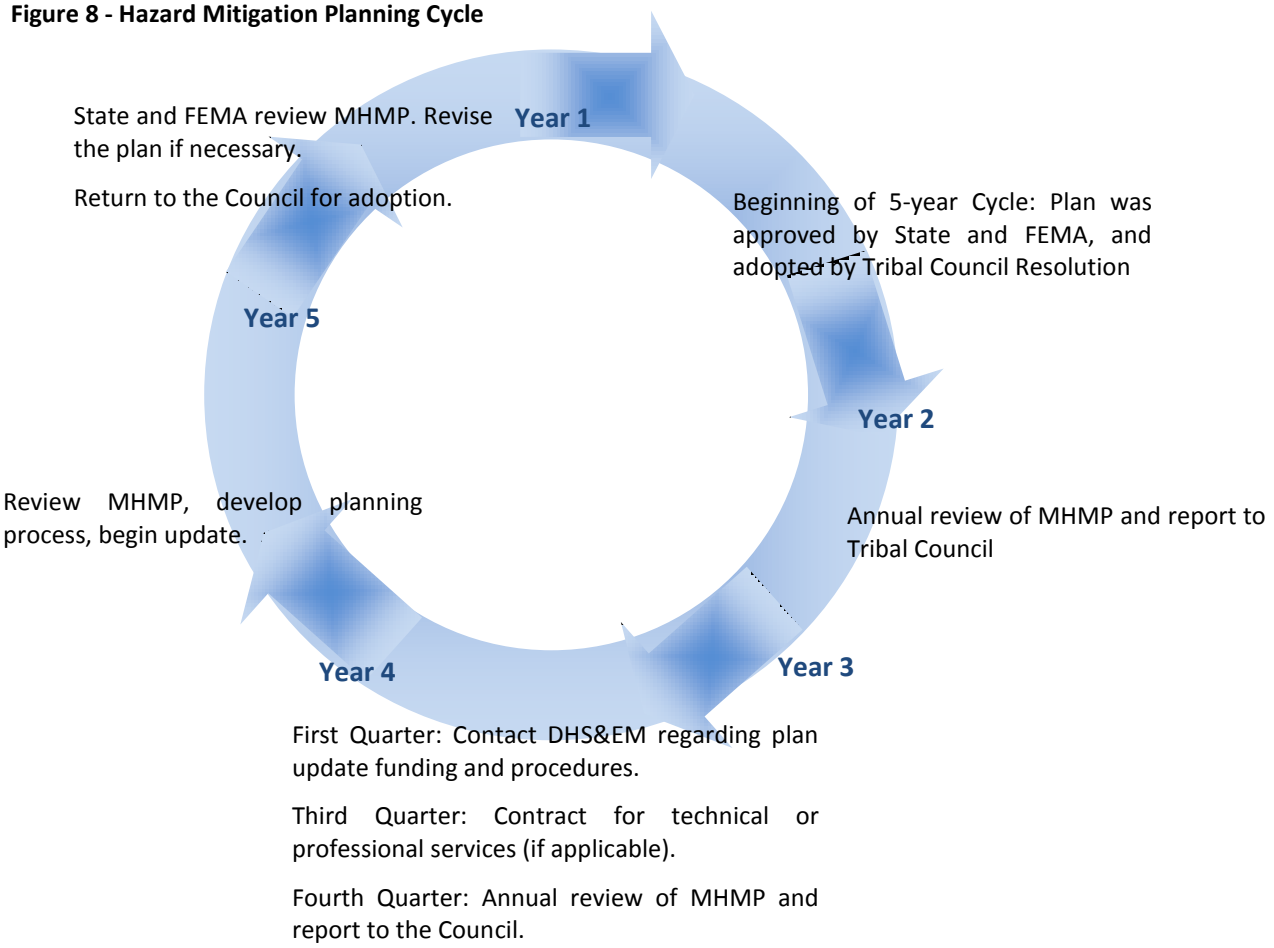


Table 11.2 lists the schedule for completion of these tasks, provided that funds are available to do so:

Table 11.2 - Continued Plan Development

Hazard	Status	Hazard Identification Completion Date	Vulnerability Assessment Completion Date
Earthquake	Completed	2010	2010
Flood/Erosion	Completed	2010	2010
Severe Weather	Completed	2010	2010
Tsunami/Seiche	Completed	2010	2010
Ground Failure	Completed	2010	2010
Wildland Fire	Completed	2010	2010
Avalanche	NA	NA	NA
Volcano	NA	NA	NA
Economic	Future Addition	2015	2015
Technological	Future Addition	2015	2015
Public Health Crisis	Future Addition	2015	2015

11.3 Continued Public Involvement

The following methods will be used for continued public involvement.

A copy of the MHMP will be put online at the Tribe's website: http://www.jamestowntribe.org. Copies of the MHMP will be available to the public at the Tribal office.

On an annual basis the Tribe will review the plan, which will be advertised to the public using the same methods established under the public involvement section of this plan. The public will be involved in the process described in the section on Monitoring, Evaluating and Updating the Plan. This includes newsletters, advertising, meetings and solicitation of written comments.

12 Bibliography

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Appendix A: Public Involvement

Hazard Mitigation Plan Needs Your Input

Disasters such as avalanches, coastal erosion, earthquakes, floods, high winds, landslides, tsunamis, wildfires and severe weather are events beyond human control. However, reducing the risks and damage from these events through mitigation efforts is possible. The Jamestown S'Klallam tribe received funding from the Federal Emergency Management Agency (FEMA) to develop a local multi-hazard mitigation plan (MHMP). WHPacific, Inc. has been hired to help the Tribe prepare the plan.

The MHMP will include information specific to the Tribe, including critical facilities, potential threats from natural hazards, and strategies to minimize the risk to people and property.

Strategies may be for immediate implementation of long term activities, and can range from educating residents about what to do in the event of a natural disaster to relocating structures away from high-risk areas.

Self-reliance is an important part of hazard mitigation, because Clallam County, specifically Blyn and Jamestown, are isolated from centrally-located services. Awareness and preparedness are important for individuals, neighborhoods and businesses. We never know where we'll be when disaster strikes!

This plan will be available for the Tribal community and staff to review in its initial draft and after it has been reviewed and pre-approved by FEMA. The plan must be approved by the Tribal Council and FEMA. Once the plan is finalizes, the Tribe is eligible to apply for FEMA funds for the community's identified mitigation projects.

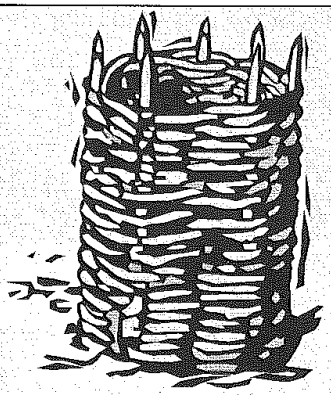
How can you help?

Use the form on the next page to communicate your observations and concerns to the planners, or contact them directly (see box for contact information). They need your input in February or March!

Tsunami is a real threat to Tribal lands along the north shorelines of the Olympic Peninsula.

Cultural Thursdays are cancelled until March 4, when they will resume:

Starting on March 4, join us on Thursday nights for a potluck dinner beginning at 5 p.m. in Hummingbird Hall for an opportunity to work on projects and spend time together. Call or email Vickie at 360-681-4659 or vcarroll@jamestowntribe.org to confirm your participation.



JAMESTOWN S'KLALLAM TRIBE HAZARD MITIGATION PLAN

Hazard mitigation planning analyzes what hazards impact your community and what mitigation techniques will reduce damage to property and people. We have identified **flood, landslide/ erosion, severe weather, tsunami, wildland fire, and earthquake** as hazards impacting the Jamestown Tribal Land Area.

What hazards do you believe impact Tribal facilities? What projects would you suggest to reduce the impact of hazards on Tribal Land Area? Please provide any comments you may have on this sheet or send a separate letter, e-mail or fax to one of the contacts provided below. Your input will be considered throughout the project development process.

Comments (please print): _____

_____

_____

_____

_____

_____

_____

_____

Planning Team Contact Information:

Leanne Jenkins, Planning Director
Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, WA 98382
Phone: 360-681-4669
Fax: 360-681-4653
ljenkins@jamestowntribe.org

Colleen Jollie, Project Manager
WHPacific, Inc.
724 Columbia Street NW, Suite 140
Olympia, WA 98501
Phone: 360-918-5337
Fax: 360-754-1195
cjollie@whpacific.com

Suzanne Taylor, Planner
WHPacific, Inc.
300 West 31st Avenue
Anchorage, AK 99503
Phone: 907-339-6570
Fax: 907-339-5328
staylor@whpacific.com

(Optional)

Name: _____

Address: _____

_____

Phone: _____

E-mail: _____

___ Please include me on the project mailing list.

To all Tribal Citizens who have Hunting tags and permits and/or shellfish subsistence cards:

Hunting permits and the tags are due back in my office by March 15, 2010. The Jamestown S'Klallam Tribe had a 98% return rate for hunting tags and permits last year. Let's be the Tribe with 100% this year!

Shellfish Subsistence cards will expire on March 31, 2010. If you were issued a 2009 subsistence card, you will need to bring in your expired card before being issued a 2010 subsistence card.

~ Susan Stark, Natural Resources Program Assistant

Attention 2010 High School Graduates and GED Recipients

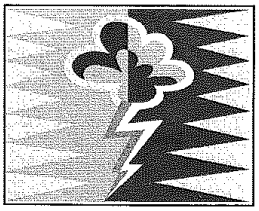
If you will be graduating or receiving your GED in 2010, the Tribe wants to acknowledge you! Please contact Kim Kettel to give her all of the details. This includes all upcoming graduates living in or out of the Tribe's immediate service area. he Tribe wants to know about YOU and your accomplishments! The contact information is below.

Attention Potential and Current College Students

The deadline for Tribal Citizens (both new and returning students) to apply for Jamestown S'Klallam Higher Education Assistance for the 2010-11 academic year is March 15th. The application process includes several pre-requisites such as applying first with federal student aid and submitting past high school and college transcripts. Kim Kettel, the Higher Education Coordinator for the Tribe, suggests students start the process immediately to ensure meeting the March deadline. On time applicants will be reviewed for cost of education and related expenses for students beginning fall 2010 term or as returning students.

Contact for more details: **Kim Kettel, Education /Education/Job Training Coordinator**
Phone: 360-681-4626
Fax: 360-681-3402
E-mail: kkettel@jamestowntribe.org

Natural Disasters: Not "If" but "When"



Drought, resulting in wildland fires. Earthquakes. Flooding. Severe storms. These are just a few of the natural hazards that have the potential to cause damage in Clallam County.

In order to protect the Tribal community, and the Tribal governmental facilities that serve you, the Tribe is preparing a hazard mitigation plan that outlines key hazards, likelihood of occurrence, and ways to prevent or minimize the damage from these events. The Plan will cover the areas of Jamestown Beach, Blyn, the Dungeness Valley, and any other area where the Tribe has property or interests.

Having a Hazard Mitigation Plan in place ensures that the Tribe will be able to access funding from FEMA for improvements to protect people, property and facilities. As an example, one of our highest priorities will be improving the Jamestown Beach Water System so that it is protected from coastal flooding.

Our consultants will be available to speak with you at the March 13 General Citizens Meeting. They would like to hear your ideas and suggestions for making sure that individuals, the community, and the Tribal government are well-prepared for the next disaster.

JAMESTOWN S'KLALLAM TRIBE
1033 Old Blyn Highway, Sequim, WA 98382 360/683-1109 FAX 360/681-4643

GENERAL CITIZENSHIP MEETING
SATURDAY, MARCH 7, 2009
10:00 P.M. - 2:00 P.M
TRIBAL COMMUNITY CENTER

SIGN IN SHEET

NAME	NAME
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11.	23.
12.	24.

25. [illegible]
26. Thomas A Butler
27. Dana Ward
28. Julie Grinnell

Page 2

JAMESTOWN S'KLALLAM TRIBE

1033 Old Blyn Highway, Sequim, WA 98382 360/683-1109 FAX 360/681-4643

GENERAL CITIZENSHIP MEETING
SATURDAY, MARCH 13, 2010
10:00 P.M. - 3:00 P.M
TRIBAL COMMUNITY CENTER

SIGN IN SHEET

NAME	NAME
1. Kurt Grinnell	13. Leanne Jenkins
2. Liz Mueller	14. Bill Riley
3. Martha C Adam	15. D. Gange
4. Vince Prince	16. Scott Chitwood
5. Sherry McAllister (Twiggs)	17. Janis King
6. Lisa Barrell	18. Ben J MacGregor
7. Stan Jones	19. Les Prince
8. Vickie R Carroll	20. Heather Johnson-Jerome
9. Theresa R. Lehman	21. John A. Warren
10. Albert E. Fletcher	22. Fred M. Grinnell
11. Ethel M. Colon	23. Annette Nesse
12. Dana Ward	24. Elaine Grinnell

25. Dawn Sargent (STAFF)
26. Fred Minkler
27. Ben Nieff
28. Charles Becker
29. Janet L Duncan
30. LaTrisha Suggs
31. Austin Suggs
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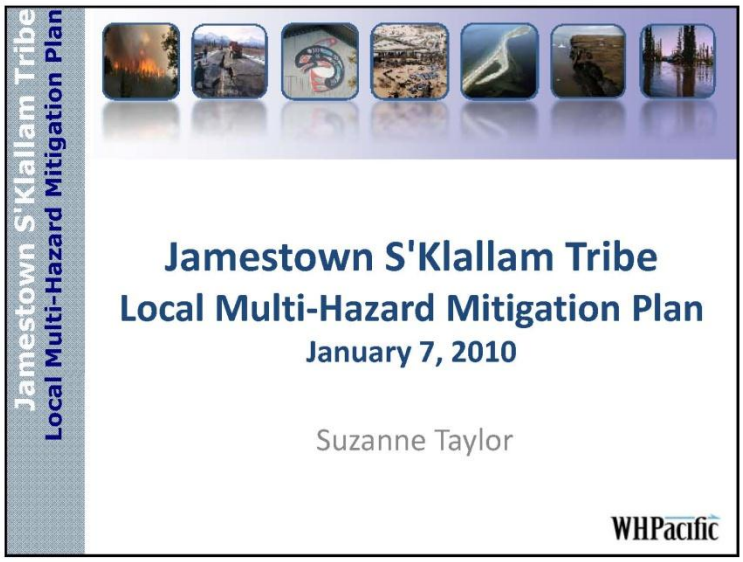

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan
Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan
January 7, 2010
Suzanne Taylor
WHPacific


Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan
Which of these hazards impact the Jamestown S'Klallam Tribe?
Severe Weather
Wildfire
Avalanches
Landslides
Earthquake
Tsunami
Flooding/Erosion

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

What is mitigation?

Any activities which actually eliminate or reduce damages incurred from a disaster.

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

Overview

- What is a Local Multi-Hazard Mitigation Plan?
- Why Does the Tribe Need One?
- What are the Planning Steps?

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

What is a Local Multi-Hazard Mitigation Plan?

A plan adopted by the local governing body, which identifies hazards, risks, and vulnerabilities and includes prioritized mitigation projects.

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

Why does the tribe need a multi-hazard mitigation plan?

Disaster Mitigation Act of 2000 (DMA 2000) requires local governments, as a condition of receiving federal disaster mitigation funds, to have a mitigation plan.

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

What happens after the plan is completed?

The tribe will be eligible to apply for mitigation project funds from FEMA.

Jamestown S'Klallam Tribe
Local Multi-Hazard Mitigation Plan

Project contacts:

Leanne Jenkins, Planning Director
Jamestown S'Klallam Tribe
360.681.4669
ljenkins@jamestowntribe.org

Colleen Jollie, Project Manager
WHPacific, Inc.
360.918.5337
cjollie@whpacific.com

Suzanne Taylor, Planner
WHPacific, Inc.
907.339.6570
staylor@whpacific.com

6

Jamestown S'Klallam Tribe
HAZARD MITIGATION PLAN

Background: Under FEMA Disaster Declaration 1734, the Tribe was awarded funding to develop a Tribal Hazard Mitigation Plan (we were previously covered under Clallam County's interjurisdictional HMP). We have contracted with WHPacific to conduct the planning process and produce the required assessment, goals, actions and strategies.

Action: Our consultants are attending the January 7, 2010 Executive Committee meeting to brief the directors and solicit ideas and input for the plan. By familiarizing themselves with the background summary sent under separate attachment, Directors will be able to participate with maximum responsiveness. Directors should be prepared to share their ideas for preparing and protecting the Tribe's infrastructure, resources and community in the event of natural disasters such as earthquake, flood, windstorm, wildfire, etc.

Goals can include maintaining transportation routes; maintaining the reliability of utilities; maintaining emergency services capability, including keeping communication channels open; and minimizing damage and reducing repetitive losses from key hazards such as flooding, landslide and seismic-related events. Mitigation actions will cover prevention, property protection, public education and awareness, natural resources protection, emergency services protection, and structural mitigation actions. Actions must address both existing and future assets, *especially the loss of critical facilities that affect continuity of operations*

Tribal staff have preliminarily identified potential Hazard Mitigation Projects based upon the existing risk assessment. We can divide them into two categories: protecting critical facilities associated with the Tribal Campus; and protecting critical facilities associated with the Jamestown Beach community, which is home to many of our Tribal citizens and families.

Potential Projects

1. Tribal Campus
   - Protecting critical facilities
     - Infrastructure protection - communications systems on Tribal Campus
     - Securing non-structural hazards (installing anchors, latches, bracing, restraints, flexible connections, etc)
     - Seismic strengthening and retrofitting buildings – earthquake protection and sprinklering in Admin building/Annex
     - Floodproofing – Tribal campus buildings
     - Infrastructure hardening (identification of critical public services such as utilities and roads to meet seismic design standards).
     - Large-diameter fire hoses
   - "Continuity of operations"
     - Back-up power sources and generators – for Tribal campus

- Capital improvements
  - Storm drainage systems and system maintenance
  - Roads – Upgrade Zaccardo and Chicken Coop to secure integrity of tsunami escape route

2. Tribal Community
   - Protecting critical facilities
     - Protect Jamestown Beach Water System from tsunami /coastal flooding
   - Outreach programs
     - Family disaster plans and supply kits – for Jamestown Beach families reacting to tsunami, earthquake, extended power outage
     - NOAA weather radios for individuals in a community
     - Utility failure—contacting and assisting vulnerable populations
     - Non-structural hazards (installing anchors, latches, bracing, restraints, flexible connections, etc)

Executive Committee Meeting
01/07/2010
Minutes

In Attendance: Annette Nesse, Bill Riley, Cindy Lowe, Diane Gange, Doug Sellon, Fred Minker, Jessica Payne, Leanne Jenkins, Leo Gaten, Liz Mueller, Robin Hake, and Scott Chitwood. Cyndi Ferguson via teleconference.

Excused: Ron Allen and Linda Ruffcorn/Jerry Allen

Meeting call to order at 9:05am

December 10, 2009 Minutes as presented.

New Business

C. Hazard Mitigation Plan Leanne Jenkins

Presentation by Suzanne Taylor and Colleen Jollie, WHPacific. Under FEMA Disaster Declaration 1734, the Tribe was awarded funding to develop a Tribal Hazard Mitigation Plan (we were previously covered under Clallam County's inter-jurisdictional HMP). We have contracted with WHPacific to conduct the planning process and produce the required assessment, goals, actions and strategies. The current focus of the planning is for natural hazards, then in about 5 years or so it might be possible to add human-induced hazards (such as terrorist attacks) to the plan. The mitigation plan is to figure out what can be done ahead of time instead of how to respond to certain situations when they occur. These plans are created to receive possible funding. This plan will need to be reviewed and approved by the Tribal Council and then submitted to FEMA for review and approval, once it is approved by FEMA it will need to be adopted by the Tribal Council. Creating our own plan makes it impossible to get overlooked by being in a blanket plan i.e. County Plan. This plan will be a living document, which is assessed annually with approximately a 5 year cycle. Although it is not an Emergency Operations Plan (EOP) per se, the plan can include a recommendation to develop an EOP as a tool for hazard mitigation.

The Directors were offered an opportunity to suggest strategies for preventing damage to human communities, Tribal facilities, and natural resources in the event of natural disaster(s).
Discussion included: maintaining communications and transportations networks during a disaster; developing a mutual aid agreement for law enforcement response; ensuring self-reliance among the Tribal community; and cross-training in emergency response among Tribal staff.

Specifically: Tsunami Ready

1. Communication System should include radios in rural areas, satellite system, (note: satellites at casino are huge, could they be commandeered during a catastrophic episode?); Op-Net with county; need law enforcement coordination and cooperation in the peninsula community.
2. Have in place an Intertribal Mutual Aid Agreement
3. Health Care Offices/Agencies work across jurisdictions, NOT so with Law Enforcement – needs improvement
4. Underground springs under the tribal administration building, concern for liquefaction in an earthquake
5. Health Facility must be added as a Critical Facility
6. Need $65,000 for commercial generator
7. Question regarding "events", what about sea water rise over time? Need to contact Jones and Jones to gain access to their Rising Tide Model and its effect on Tribal lands.

The consultants distributed comment sheets for written suggestions and ideas**; they need these comments by FEBRUARY 15**. The HMP must be completed by April.

IV. Old Business

V. Program Updates

Time did not allow for program updates at this meeting.

VI. Unscheduled Business

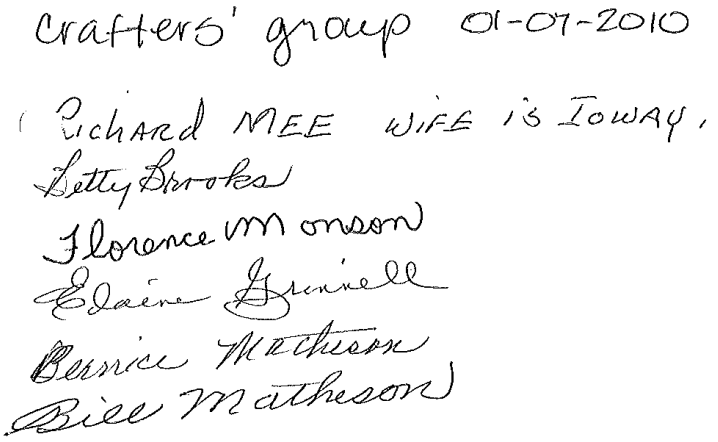
VII. Adjournment

The next meeting will be February 4th at 9 a.m. in the Alderwood room. Meeting adjourned at 12:02 p.m.

2010 Meeting Schedule

January 7, 2010
February 4, 2010
March 4, 2010
April 1, 2010
May 6, 2010
June 3, 2010
July 1, 2010
August 5, 2010
September 2, 2010
October 7, 2010
November 4, 2010
December 2, 2010

Tribal Crafters' Group sign-in
Same presentation and handouts were given as to the Executive Committee.



JAMESTOWN S'KLALLAM TRIBE HAZARD MITIGATION PLAN

Hazard mitigation planning analyzes what hazards impact your community and what mitigation techniques will reduce damage to property and people. We have identified **flood, landslide/erosion, severe weather, tsunami, wildland fire,** and **earthquake** as hazards impacting the Jamestown Tribal Land Area.

What hazards do you believe impact tribal facilities? What projects would you suggest to reduce the impact of hazards on Tribal Land Area? Please provide any comments you may have on this sheet or send a separate letter, e-mail, or fax to the contact information that is provided. Your input will be considered throughout the project development process.

Comments (Please Print): For Tribal facilities I do see that there is a potential of impact due to flooding from high tides + storms and near shore erosion. Due to the road (Hwy 101) there is a possible hazard due to the transportation of hazardous material + potential for accidents. Being in an earthquake zone all citizens are at risk due to bridge failures, loss of personal property and Fire due to over head electrical wires.

Planning Team Contact Information:

Leanne Jenkins, Planning Director
Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, Washington 98382
360.681.4669 – Direct
LJenkins@JamestownTribe.org

Colleen Jollie, Project Manager
WHPacific, Inc.
724 Columbia Street NW, Suite 140
Olympia, Washington 98501
360.918.5337 – Direct
360.754.1195 – Fax
CJollie@WHPacific.com

Suzanne Taylor, Planner
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300 W 31ST Avenue
Anchorage, Alaska 99503
907.339.6570 – Direct
907.339.5328 – Fax
STaylor@WHPacific.com

☐ Please include me on the project mailing list

There is a health hazard to potential outbreaks (Swine Flu, H1N1, measels, smallpox) and having an emergency supply of a variety of medical supplies so Tribal members can come to the clinic + receive care during either a health emergency or an act of "God".

Where I live at 1835 W 6th PA I face the issues of land slides + tsunami hazards. I also an impacted via my health + surrounding environment from pollutants emitted from Nippon paper mill. I do carry fire insurance but due to cost do not carry earthquake insurance + would suffer economically if damage to my home was due to an earthquake.

A couple of years ago homes around me were damaged due to sustained winds of up to 100 mph. My home escaped damage, but high winds is also a concern. Further west I did hear of homes that were damaged due to mini tornado's that touched down.

To help reduce impacts I suggest hiring a part-time person to establish an emergency operations center, identify where cert teams could be developed (down at Jamestown beach), start cert classes ~~so that~~ and encourage Tribal citizens + their neighbors to become CERT members. Lower Elwha works with Phil Slinko(P/T) + has developed an EOC + CERT teams. Provide Tribal members the opportunity to purchase "at-cost" emergency kits like shelter kits, drinking water kits, medical supplies, flash lights, small axes, weather radios, ponchos, etc.

JAMESTOWN S'KLALLAM TRIBE HAZARD MITIGATION PLAN

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What hazards do you believe impact tribal facilities? What projects would you suggest to reduce the impact of hazards on Tribal Land Area? Please provide any comments you may have on this sheet or send a separate letter, e-mail, or fax to the contact information that is provided. Your input will be considered throughout the project development process.

Comments (Please Print): Would like to see the Jamestown Tribe allow grass to grow across the beach property to help prevent flooding ~~to~~ that may cross road.

Planning Team Contact Information:

Leanne Jenkins, Planning Director
Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, Washington 98382
360.681.4669 – Direct
LJenkins@JamestownTribe.org

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WHPacific, Inc.
724 Columbia Street NW, Suite 140
Olympia, Washington 98501
360.918.5337 – Direct
360.754.1195 – Fax
CJollie@WHPacific.com

(Optional)

Name: _____

Address: _____

Phone: _____

Email: _____

☐ Please include me on the project mailing list

JAMESTOWN S'KLALLAM TRIBE HAZARD MITIGATION PLAN

Hazard mitigation planning analyzes what hazards impact your community and what mitigation techniques will reduce damage to property and people. We have identified **flood, landslide/erosion, severe weather, tsunami, wildland fire,** and **earthquake** as hazards impacting the Jamestown Tribal Land Area.

What hazards do you believe impact tribal facilities? What projects would you suggest to reduce the impact of hazards on Tribal Land Area? Please provide any comments you may have on this sheet or send a separate letter, e-mail, or fax to the contact information that is provided. Your input will be considered throughout the project development process.

Comments (Please Print): I believe a Tsunami is resulting from an offshore earthquake is probably the most likely catastrophe. In 1700 AD a huge tsunami hit the coast of Wash. and Oregon. This area is in the top 5 spots in the world for an earthquake of 8.5 magnitude or more.

Planning Team Contact Information:

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Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, Washington 98382
360.681.4669 – Direct
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360.754.1195 – Fax
CJollie@WHPacific.com

☒ Please include me on the project mailing list

leanne

JAMESTOWN S'KLALLAM TRIBE HAZARD MITIGATION PLAN

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What hazards do you believe impact tribal facilities? What projects would you suggest to reduce the impact of hazards on Tribal Land Area? Please provide any comments you may have on this sheet or send a separate letter, e-mail, or fax to the contact information that is provided. Your input will be considered throughout the project development process.

Comments (Please Print):

= Railroad Bridge - flooding due to high water events needs to be addressed to protect buildings / bridge & trestle / parking lot

= Jamestown Beach - protection of lives + facilities from high winds, tsunami, flood & high water events. Also, can we train the residents re: sheltering in place?

Planning Team Contact Information:

Leanne Jenkins, Planning Director
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€ Please include me on the project mailing list

Appendix B: Infrastructure

JAMESTOWN S'KLALLAM TRIBE
STATEMENT OF VALUES AND COPE
2008-2009

Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
100 B	22-1	Water Tower & Infrastructures	$357,076	$0	$0	$0				8			
100 B		Sequim, WA											
101	1-1	Tribal Center	$1,606,516	$200,302	$500,000	$0	Frame	7,812	1987	8	3+B	Offices	None
101		1033 Old Blyn Hwy,											
101		Sequim, WA											
101 A	1-2	Maintenance Bldg	$59,512	$18,769	$0	$0	Frame	576	1991	8	1	Maintenance	None
101 A		1033 Old Blyn Hwy,											
101 A		Sequim, WA											
101 B	1-3	Relocated Community Center	$204,054	$83,062	$0	$0	Frame	1,728	1987	8	1	Civic	None
101 B		1033 Old Blyn Hwy,											
101 B		Sequim, WA											
101 C	1-4	Annex Building	$1,171,084	$147,511	$0	$0	Frame	8,720	1990	8	1+B	Office	None
101 C		991 Old Blyn Highway											
101 C		Sequim, WA											
102	15-1	McPhearson Property -	$136,180	$0	$0	$0	Frame		1978	8			
102		110 Sophus Road,											
102		Sequim, WA											
103	17-1	Jamestown Water System	$11,210	$23,784	$0	$0	Frame			8			
103		1252 Jamestown Road,											
103		Sequim, WA											
104	24-1	Dwelling JSTHP # 3	$160,733	$0	$0	$0	Frame			4			
104		1632 W 6th St											
104		Port Angeles, WA											
105	11-1	Rental Dwelling (Craft)	$145,300	$0	$0	$0	Frame	1,372	1978	8	1	Dwelling	None
105		182 Marinas Way,											
105		Sequim, WA											
106	25-1	TGA Office	$285,661	$0	$0	$0	Frame	2200	2000	7			
106		192 Correia											
106		Sequim, WA											
106 A	25-2	Dwelling/Garage	$65,819	$0	$0	$0	Frame	624	2000	7			
106 A		192 Correia											
106 A		Sequim, WA											

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
109	5-2	Education Center/ Children's	$486,812	$37,537	$0	$0	Frame	3,456	1980	7	1	School	None
109		Program Facility (Gesdahl)											
109		233 Zaccardo Road,											
109		Sequim, WA											
109 A	5-3	Garage Building (Gesdahl)	$36,671	$37,537	$0	$0	Frame	480	1980	7	1	Garage	None
109 A		233 Zaccardo Road,											
109 A		Sequim, WA											
110	12-1	Storage/Garage	$22,300	$0	$0	$0	Frame		1978	8	1	Storage	None
110		2350 Hwy 101											
110		Sequim, WA											
111	4-1	Rental Dwelling (McFarland)	$201,596	$0	$0	$0	Frame	1,512	1970	8	1	Dwelling	None
111		244 Knapp Road,											
111		Sequim, WA											
111 A	4-2	Garage Building	$23,589	$0	$0	$0	Frame	288	1970	8	1	Garage	None
111 A		244 Knapp Road,											
111 A		Sequim, WA											
112 A	13-1	Economic Development	$640,640	$48,498	$0	$0	Metal/Frame	3,328	1997	7	1	Offices	None
112 A		257 Business Park Loop,											
112 A		Sequim, WA											
113	3-1	Rental Dwelling (Carlson)	$240,942	$0	$0	$0	Frame	1,521	1970	7	1	Dwelling	None
113		263 Zaccardo Road,											
113		Sequim, WA											
113 A	3-2	Equipment Storage	$68,311	$0	$0	$0	Frame	650	1970	7	1	Carport	None
113 A		263 Zaccardo Road,											
113 A		Sequim, WA											
113 B	3-3	Deck and Cover	$27,455	$0	$0	$0	Frame	200	1970	7	1	Cov.Deck	None
113 B		263 Zaccardo Road,											
113 B		Sequim, WA											
113 C	3-4	Maintenance Building	$64,982	$0	$0	$0	Frame	1000	2005	7	1	Storage	
113 C		263 Zaccardo Road,											
113 C		Sequim, WA											

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113 D	3-5	Canoe Shed	$75,812	$0	$0	$0	Frame	700	2005	7	1	Storage	
113 D		263 Zaccardo Road,											
113 D		Sequim, WA											
116	26-1	Mobile Home	$89,317	$0	$0	$0	Frame		2000	8			
116		271963 Hwy 101 E											
116		Sequim, WA											
117	14-5	Shannon Property-Milk Shed	$53,719	$0	$0	$0	Frame	828	1950	8	1	Shed	None
117		274155 Highway 101,											
117		Sequim, WA											
117 A	14-6	Shannon Property - Barn	$363,942	$0	$0	$0	Frame	6,400	1950	8	1	Barn	None
117 A		274155 Highway 101,											
117 A		Sequim, WA											
118	14-1	Shannon Property -Modular	$136,180	$0	$18,700	$0	Frame	832	1989	8	1	Dwelling	None
118		274157 Highway 101,											
118		Sequim, WA											
119	14-2	Shannon Property-Dwelling	$264,433	$0	$0	$0	Frame	856	1950	8	1	Dwelling	None
119		274157 Highway 101,											
119		Sequim, WA											
120	14-3	Shannon Property-Garage	$26,166	$0	$0	$0	Frame	432	1950	8	1	Garage	None
120		274157 Highway 101,											
120		Sequim, WA											
121	14-4	Shannon Property Storage	$15,758	$0	$0	$0	Frame	190	1950	8	1	Storage	None
121		274155 Highway 101,											
121		Sequim, WA											
122	20-1	Dwelling JSTHP # 2	$101,220	$0	$0	$0	Frame		1928	5	1	Tenant	None
122		286 Cedar Street											
122		Sequim, WA											
125	2-1	JKT Log Structure	$321,125	$40,071	$31,900	$0	Frame/Log	2,720	1980	8	2+B	Offices	None
125		3830 West Sequim Bay,											
125		Sequim, WA											
125 A	2-2	JKT Office Pump Bldg	$17,046	$5,016	$0	$0	Frame	160	1980	8	1	Pump	None
125 A		3830 West Sequim Bay,											
125 A		Sequim, WA											

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
125 B	2-3	Display Sign	$31,419	$0	$0	$0			1980	8	1	Sign	None
125 B		3830 West Sequim Bay,											
125 B		Sequim, WA											
126	10-1	Rental Dwelling (Smith)	$108,628	$0	$0	$0	Frame	864	1970	8	1	Dwelling	None
126		41 Enterprise Lane,											
126		Sequim, WA											
127	21-1	Dwelling JSTHP #1	$107,123	$0	$0	$0	Frame		1984	8	1	Tenant	None
127		5831 Woodcock Road											
127		Sequim, WA											
128	19-1	Jamestown Family Health Clinic	$0	$494,283	$0	$0	Frame			5			
128		777 N 5th Avenue											
128		Sequim, WA											
130	1-7	Nason Property - Dwelling	$250,000	$0	$0	$0	Frame	960	1973	8	1	Dwelling	None
130		931 Old Blyn Highway,											
130		Sequim, WA											
130 A	1-8	Nason Property - Garage	$52,332	$0	$0	$0	Frame	672	1973	8	1	Garage	None
130 A		931 Old Blyn Highway,											
130 A		Sequim, WA											
131	1-5	Carving Building	$412,500	$16,287	$0	$0	Frame	3,000	1991	8	1	Storage	None
131		991 Old Blyn Hwy,											
131		Sequim, WA											
131 A	8-1	Gallery Gift Shop/Tribe	$0	$153,976	$93,500	$0	Frame	1,000	1985	8			
131 A		991 Old Blyn Hwy,											
131 A		Sequim, WA											
132	1-6	Interpretive Display Bldg	$312,899	$0	$0	$0				8			
132		Hwy 101, Sequim, WA											
132		Sequim, WA											
132 A	1-9	Kiosk	$104,762	$0	$0	$0	Frame	400	2000	8	1	Info Center	None
132 A		Hwy 101											
132 A		Sequim, WA											
133	18-1	Interpretive Building	$367,906	$33,815	$0	$0	Frame	1,623	2000	8	1	Meeting	None
133		Railroad Bridge Park										Displays	
133		Sequim, WA										Tours	

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
133 A	18-2	Railroad Bridge Park Bridge	$386,880	$0	$0	$0	Frame			8			
133 A		Railroad Bridge Park											
133 A		Sequim, WA											
133 B	18-3	Restrooms	$35,707	$0	$0	$0	Frame			8			
133 B		Railroad Bridge Park											
133 B		Sequim, WA											
133 C	18-4	Picnic Structure	$21,444	$0	$0	$0	Frame			8			
133 C		Railroad Bridge Park											
133 C		Sequim, WA											
135	1-10	Dental Clinic/Community Center	$2,815,884	$162,218	$0	$0	Frame	11,400	2004	8	2	Dental Clinic	Sprinklered
135		1031 Old Blyn Hwy											
135		Sequim WA											
138	29-1	Dwelling	$162,455	$0	$0	$0	Frame	1500	2003	8	1		
138		271020 Hwy 101											
138		Sequim, WA											
140	32-1	JKT Development, Inc.	$0	$15,140		$0	Brick	500	1990	4	3	Office	
140		15405 SE 37th St #200											
140		Bellevue WA 98006											
142	34-1	Social & Community	$2,815,884	$324,437	$0	$0	Frame	10000	2005	7	2		
142		70-72 Zaccardo Road											
142		Sequim, WA											
143	34-2	Storage Building	$54,152	$0	$0	$0	Frame	1000	2005	7	1	Storage	
143		Sequim WA											
145	37 - 1	Scheduled Equipment	$0	$1,493,326	$0	$0						Scheduled Equip.	
145		Sequim, WA 98382										Incl Cont Equip,	
146	38 - 1	Scheduled Equipment	$0	$54,073	$0	$0						Unscheduled EDP	
		Unscheduled EDP											
146		Sequim, WA 98382											
148	36-1	Dwelling	$387,380	$0	$0	$0	Frame	3400	1949	8	1.2	Dwelling	
148		1272 Jamestown Rd											
148		Sequim, WA 98382											

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
149		Medical Office / Clinic	$0	$0	$0	$0	All COMB	3439	1961		1		
149		411 Washington Street					(Wood Frame)						
149		Sequim, WA											
150	41 - 1	Rental Dwelling	$140,935	$0	$0	$0		1183	1992		1	Rental Dwelling	
150		2209 East 6th Avenue										(Pizzuto)	
150		Port Angeles, WA 98362											
152	43 - 1	Rental Dwelling	$175,000	$0	$0	$0		960	1918		1	Rental Dwelling	
152		1790 Old Blyn Hwy										(Jensen-Simms)	
152		Squim, WA 98382											
153	44 - 1	Rental Dwelling	$244,343	$0	$0	$0		2051	1992		2	Rental Dwelling	
153		270934 Highway 101										(Mclaughlin)	
153		Squim, WA 98382											
154	45 - 1	Rental Dwelling	$110,080	$0	$0	$0		924	1977		1	Rental Dwelling	
154		120 Zaccardo Road										(Lamp)	
154		Squim, WA 98382											
155	46 - 1	Rental Dwelling	$1,116,634	$0	$0	$0		9375			1	Rental Dwelling	
155		145 West Alder Street										(Cooper)	
155		Squim, WA 98382											
156	47 - 1	Rental Dwelling	$212,297	$0	$0	$0		1782	1995		1	Rental Dwelling	
156		1950 Old Blyn HWY										(Knutson)	
156		Squim, WA 98382											
157	48 - 1	Rental Dwelling	$121,636	$0	$0	$0		1021	1910		1	Rental Dwelling	
157		2150 Old BLYN HWY										(Fiorini)	
157		Squim, WA 98382											
159	52-1	Single Family Resident	$402,878				Wood Frame Const.	2207	2007		2		
159		50 Aspen Creek											
159		Sequim, WA 98382											
160		Dwelling	$193,436	$0	$0	$0	Modulator	1769	1985				
160	50-1	145 Greenbriar Lane											
160		Sequim, WA											
161		Dwelling	$209,120	$0	$0	$0	Stick Built	1472	1969				
161	49 - 1	2203 Woodcock Rd.											
161		Squim, WA 98382											

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
162	53-1	Single Family Residential	$230,032	$0	$0	$0	Stick Built	2112	1976		2		
162		625 Lopez											
162		Port Angeles, WA 98362-6712											
163		Carlsborg Mine Storage	$0	$52,315	$0	$0	Steel Frame & Siding	10X20	2005			Medical Equip.	
163		292 Business Park Corp Unit A-3											
163		Carlsboring, WA											
164		JKT Development, Inc. Office	$57,640	$10,463	$0	$0		10X40				Mobile Office	
164		1115 W. Lexington											
164		Oak Harbor, WA 98277											
165		Modular	$0	$104,630	$0	$0		1435	1976				
165		2092 Old Blyn Highway											
165		Sequim, WA											
166		Dwelling	$ 313,680	$0	$0		All COMB	1551					
166		320 Choice Loop					Wood Frame						
166		Sequim WA								DELETE LOCATION EFF 07/15/09			
167		Cemetery Pump House	$ 13,593	$0	$0		All COMB						
167		Sequim, WA					Wood Frame						
168		Totems and Carved Panels	$ 20,285										
168		Sequim, WA 99382											
169		Library Collection		$84,726									
169		991 Old Blyn Hwy											
169		Sequim, WA 99382											
170		Lot 4 of Eagle Mountain	$ 302,178	$0	$0	$ -	ALL COMB	1551					
170		Sequim, WA 99382					Wood Frame			DELETE LOCATION EFF 07/15/09			
171		Fire Stateion	$ 1,500,000	$0	$0		Masonry	6000					
171		54 Sophus Road					Const/Wood Roof						
171		Sequim, WA 98382											
		New Clinic 808 N 5th Ave Sequim, WA 98381 (Builders Risk)	TBD									Still being Built Bldg not completed yet.	

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Tribal First Location	Location Number	Description	Building	BPP	BI/EE & LOR	Builder Risk	Const Type	Sq. Ft	Yr. Built	Protection Class	Stories	Occupancy	Sprinklers/ Fire Controls
		TOTAL	$ 21,272,283	$3,641,776	$644,100								
		GRAND TOTAL	$ 25,558,159										