

**PUYALLUP TRIBE OF INDIANS
ALL HAZARDS
MITIGATION PLAN**



2017 – 2022 EDITION

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PUYALLUP TRIBE ALL HAZARD MITIGATION PLAN 2017-2022 EDITION

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PUYALLUP TRIBE ALL HAZARD MITIGATION PLAN 2017-2022 EDITION EXECUTIVE SUMMARY

“My heart’s been warmed by watching the best in people come out when disaster strikes. But my heart’s been broken by seeing the pain I knew could have been prevented.”

--James Lee Witt

Introduction

Public Law 106-390 The Disaster Mitigation Act of 2000 was passed by Congress on October 30th, 2000 and amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. This act required local jurisdictions to have a disaster mitigation plan in order to obtain either Pre-Disaster Mitigation (PDM) or Hazard Mitigation Grant Program (HMGP) funds.

The Puyallup Tribe of Indians Mitigation Plan was originally completed in 2012 and was a compilation of over five years of work completed by representatives of the Puyallup Tribe members included in the plan. It encompassed their work under the direction of staff from the Pierce County Department of Emergency Management.

At this time, a comprehensive review and update of the original plan is complete and began in November of 2015. The original plan is due to expire in April of 2017 and this updated plan will replace that plan. This update encompasses the work of the Public Safety Department and the Emergency Management Committee (EMC) under the direction and guidance of staff from the Pierce County Department of Emergency Management.

Homeland Security Region 5 is congruent with Pierce County. While technically the two are interchangeable on a geographic level they are not interchangeable on the planning level. This plan, and the commitment of those whose energy created it, is a testament to the resolve of the Puyallup Tribe of Indians to make Region 5, Pierce County, a safer more enjoyable place to work, live, and play.

This Plan originally began as a natural hazard mitigation plan. As such it addressed those hazards that are considered part of the natural environment of Pierce County. Additionally it continues to address risks which are secondary to natural hazards and classified within the Plan as human-caused or technological hazards. These secondary risks include the interruption of power, gas and water supplies; transportation; civil unrest; dam failure; epidemic; hazardous materials and terrorism.

Traditionally many of the hazards were considered independently. For the purposes of this Plan some consolidation was done. For example, snowstorms, ice storms, tornadoes, and windstorms were all combined into a single category, severe weather. The other traditional hazards that are included are avalanche, drought, earthquake, flood, landslide, tsunami and seiche, volcano, and wildland/urban interface fires. Due to the extensive research that has been conducted the past few years into the effects of **climate change** the decision was made to provisionally include it in the Plan, but without attempting to address mitigation measures related to it. The Puyallup Tribe has taken a pro-active approach to climate change and partnering with a consulting company worked to conduct an assessment report. This report along with another report from the Treaty Tribes in Western Washington are included with this updated plan. As more is understood about the consequences for the local jurisdictions mitigation measures may be included in future editions of the Plan.

Some but not all of these hazards have had a major impact on the Puyallup Tribe of Indian's reservation within Pierce County. Of the 9 natural hazards that affect Pierce County, avalanche is the only one that affects very few jurisdictions. Avalanches are a factor in the higher mountainous areas of Pierce County; areas that are outside the boundaries of the reservation.

Natural Hazards

Drought has intermittently created problems for citizens across Pierce County. Generally not reaching disaster proportions, it strains the ability of water purveyors to supply the public with enough water to carry on their normal activities. Drought can have variable effects depending on the location within the Region and type of businesses that are affected. Fisheries, agricultural based businesses and a few types of industry will feel the effects the earliest and usually the most. It is not until a drought has occurred for some time that citizens in the Region begin to feel its effects in their everyday activities.

The **earthquake** threat is becoming better known through the research done by both governmental and educational organizations. We no longer have to rely on recorded earthquakes of the past 150 years. Research has shown that we have three distinct earthquake threats in Region 5, Pierce County that would affect the Puyallup Tribe. Deep earthquakes like the 2001 Nisqually earthquake that was magnitude 6.8; earthquakes on the Seattle or Tacoma Faults that could have a magnitude up to 8.0; and subduction earthquakes located off the Washington Coast that could have a magnitude as high as 9.0. An earthquake of any of these types could cause millions if not billions of dollars of damage within the Region.

Floods are the cause of most federal disaster declarations that include Pierce County. The last three major floods to impact Pierce County were in January 2009, November 2006 flood and 1996-7 floods. All of these caused millions of dollars worth of damage to both the private and public sectors.

The **landslide** hazard in Pierce County includes slopes identified as having over a 15% rise. Landslides happen with regular frequency during and after both rainstorms and earthquakes in Pierce County. To date none have been catastrophic. However, with continuing population

expansion into areas with landslide potential the possibility of a large slide damaging multiple properties and possibly injuring or killing citizens continues to increase.

The **severe weather** hazard includes the wide variety of weather problems jurisdictions in Pierce County will encounter. Windstorms, hail, snow, ice storms, and tornadoes have all impacted the County in the past. The most recent example was the federal disaster declaration for the Christmas snow and freezing temperatures of December 2008.

The **tsunami** section includes **seiche** as a problem that may impact the County in the future. Tsunami is a Japanese word meaning large harbor wave. Pierce County has been impacted by three tsunamis generated in Puget Sound in the past 120 years. The largest of these, the 1894 tsunami, originated in Commencement Bay, destroyed 300 feet of dock and sent a ten foot wave into Old Town Tacoma.

A close relative of the tsunami is the seiche. Formed in an enclosed body of water it is likened to a large basin of water where one side is lifted a little and the resulting waves are reflected back and forth from shore to shore over time. Seiches in Pierce County could happen in lakes or to some extent in the southern portion of Puget Sound.

Pierce County's **volcano** problem largely stems from Mt. Rainier. There is a small potential for ash from other volcanoes in the Cascades, especially Mt. St. Helens. Mt. Rainier is the only volcano with the potential for inundating the major river valleys in the County with mud up to 30 or more feet deep.

The **wildland/urban interface fire** (WUI) problem faced by the jurisdictions is directly related to the quantity of unimproved/forested land they have in their boundaries. The Department of Natural Resources reports that there are one or two WUI fires in the Pierce/King County area every couple of years. Most are of small size and do not affect large areas, but the possibility of a large scale fire is always there.

Technological Hazards

Known **abandoned mines** in Pierce County are all located in the eastern part of the County and thus only affect those jurisdictions in that vicinity. Potential damage from abandoned mines includes collapse of buildings or roads built over old mine shafts, but most of these are in less populated areas of the County and the threat is limited.

Civil unrest or disturbance is of higher probability in the larger cities and areas with a higher population density. This can, spill into rural areas as situations escalate. Generally it requires a seed incident and an adequate population to get started.

A **dam failure** in Pierce County would be catastrophic. Three of the largest dam failures could occur from Mud Mountain Dam, Alder/ La Grande Dam or Lake Tapps. Although these dams pose a significant high risk there are approximately 57 dams in Pierce County with the potential for dam failure which could impact citizens.

The loss of **power, gas and/or water supplies** is critical to the Puyallup Tribe of Indians jurisdiction. Singularly or in combination, disruptions may impact the level of service or the critical infrastructure and operation of businesses. The most frequent energy emergencies exist during winter storms. The breaking of power lines due to trees toppling or branches breaking is the usual cause.

Transportation accidents occurring in Pierce County have a significant potential for incidents that can occur on the road, rail, air and maritime. Depending on the type and severity of the accident the response can be critical in recovery efforts. Main highway transportation routes run directly through the Reservation and County along with passenger, freight and tourist rails. Pierce County is home to over 14 working airports, operates a ferry system and is home to a major Port.

Current Pierce County pipelines include Northwest Pipeline Corp, Olympic Pipeline Co, and U.S. Oil and Refining Co. Between these they contain 80.93 miles of natural gas pipeline and 44.68 miles of liquid petroleum product pipeline in the County and this defines the **pipeline hazard** in Pierce County.

Hazardous materials incidents may be either generated from a fixed site or the result of a transportation related accident or release.

Terrorist incidents can occur at any time or place where a group can justify or rationalize their action. They have occurred in major metropolitan areas such as bombings in New York and other major cities and they have occurred in forests of Washington and Oregon. Terrorism exists in every state in the nation.

Because these hazards continually threaten the membership and citizens that live, play or work on the Reservation, the Puyallup Tribe of Indians developed a mitigation plan and will continue to keep it updated every five years. With the competition of this updated plan another segment of the community is closer to being disaster resilient.

DMA 2000 and the Plan Purpose

FEMA defines hazard mitigation as those actions taken to reduce or eliminate the long-term risk to people, property, the social infrastructure, or the environment from hazards and their effects. Hazard mitigation planning is the process of determining the best means of reducing or eliminating these risks.

The Disaster Mitigation Act of 2000 (DMA 2000) is the federal impetus for the Puyallup Tribe of Indians All Hazard Mitigation Plan. This act, amending the Robert T. Stafford Disaster Relief and Emergency Assistance Act, added a new section 322 on Mitigation Planning. Section 322 requires each jurisdiction wishing to receive mitigation funds through the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Program, to abate or reduce the threat from local hazards by means of an approved mitigation plan. This legislation is codified as 44 CFR Part

201. The specifics that local jurisdictions are to follow in developing their plans are outlined in 44 CFR Part 201.6.

The regulatory directive included in the Federal Statement of Purpose under 44 CFR 201.1 subpart (b) states:

“The purpose of mitigation planning is for State, local, and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources.”

Taking the Federal Statement of Purpose as a guide, the Puyallup Tribe of Indians Emergency Management Planning team has developed the following Plan Purpose:

In an effort to develop disaster resilient communities by breaking the natural and man-made hazard cycle, the Puyallup Tribe of Indians joined together with Pierce County to develop this mitigation plan. Over time working independently and in coordination with Pierce County, the Puyallup Tribe of Indians through hazard risk assessments, the administration of hazard mitigation grant programs, and developing a coordinated approach to mitigation strategy at the local, state, and regional levels, will contribute to the safety and well-being of its membership and citizens throughout their Planning Area and Pierce County.

In seeking accordance with Federal requirements and the Tribe’s mission statement, the Plan Purpose is the foundation for the Plan’s Goals. The plan further provides assurances that the Indian Tribal government 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 its plan whenever necessary to reflect changes in tribal or Federal laws and statutes as required in 44 CFR 13.11(d).

The Plan’s Goals

The planning team worked together to come up with a series of goals that would represent their views and will create a foundation for the mitigation measures they develop. The goals are:

- Protect Life and Property,
- Ensure Emergency Services,
- Establish and Strengthen Partnerships for Implementation,
- Preserve or Restore Natural Resources,
- Increase Public Preparedness for Disasters, and
- Promote a Sustainable Economy.

Each mitigation measure in the individual jurisdictions portion of the plan addresses one or more of these goals. In many cases the measures address multiple goals or even all of the goals.

The Puyallup Tribe of Indians and the Process

Towards the end of 2003, the Puyallup Tribe of Indians Planning Staff in conjunction with Emergency Management Planning Staff began the development of a Natural Hazard Mitigation Plan. Essentially most of the plan was completed except for a couple of sections and the plan was never formally adopted.

In December of 2010 the Puyallup Tribe of Indians Planning Staff along with Pierce County Emergency Management Planning Staff began reviewing the plan in sections for relevancy and completed the sections not yet finished over the course of the next eight months.

The biggest change to the plan involved transforming it from a Natural Hazard Mitigation Plan into an All Hazard Mitigation Plan to include all technological hazards. This required the addition of nine sub-sections to the Risk Assessment Section of the Plan, providing the opportunity to improve the Tribe's mitigation of all hazards, and become eligible for both pre- and post-disaster mitigation funds.

In November of 2015 the Emergency Management Committee and Pierce County Emergency Management began discussing the Mitigation Plan and the course it would take for updating it over the next year. In December 2015 a "Kick-Off" meeting began the concentrated effort of this committee to review and update the plan where necessary. The Emergency Management Committee and Pierce County Emergency Management meet every month over the course of the 2016 and into 2017 to review and discuss sections of the plan. There were several meetings with individual departments for follow information that was needed in addition to the monthly meetings.

Reader's Guide to the Plan

This plan is broken into two main components, the Mitigation Plan, and the Appendices. The Mitigation Plan is the core of this Plan and covers the material giving both general and specific information relevant to the Mitigation Plan. The Appendices information follows giving relevant information to understanding the plan and will include a copy of the Council Determination Report (CDR)/resolution passed by the Tribal Council after adopting the plan.

The Mitigation Plan consists of seven sections: a Process Section; a Profile Section; a Capability Identification Section; a Risk Assessment Section; a Mitigation Strategy Section; an Infrastructure Section; and a Maintenance Section.

The Process Section describes the process the Puyallup Tribe of Indians went through with the Pierce County staff to develop these plans. It gives the participants, lists the meetings, and what was covered in those meetings.

It then addresses how the Plan was developed around all major components identified in 44 CFR 201.6, including:

- Public Involvement Process;
- Jurisdiction Profile;
- Capability Identification;
- Risk Assessment;
- Mitigation Strategy;
- Infrastructure Section; and,
- Plan Maintenance Procedure.

It discusses the reasoning for the process that was followed. It covers the types of information that was garnered from the individual jurisdictions and the information from research that was done by County staff.

The Profile Section gives an overview of the Puyallup Tribe of Indians Planning Area. It discusses the Planning Area in six different categories. They are demographics, geography, geology, climate, transportation, and economy. Maps are included to show the overall lay of the Planning Area, and a Tribes and Treaty Ceded map of Washington State. In addition summary tables provide an overview of the Tribe. Each section includes the services provided, what type of organization they are, their population, a summary of their infrastructures, individual land use descriptions, and an economic summary.

The Capability Identification Section provides an overview of the types of capabilities that would be available to local jurisdictions within the Puyallup Tribe of Indians Planning Area. It summarizes the types of capabilities that local jurisdictions are already using in some cases, and can continue to use as they develop targeted mitigation plans. It summarizes the types of capabilities and their use by local jurisdictions and covers extra-local federal funding sources, and state agencies that have mitigation capabilities. It summarizes the legal and regulatory capabilities of each jurisdiction. It then summarizes on tables the administrative, technical, and fiscal as well as any special capabilities each jurisdiction may have.

The Risk Assessment Section analyzes the risk throughout the Puyallup Tribe of Indians Planning Area for the identified hazards. The natural hazards are avalanche, drought, earthquake, flood, landslide, severe weather, tsunami, volcano, and wildland/urban interface fire. The technological hazards addressed are, abandoned mines, civil disturbance, dam failure, energy emergency, epidemic, hazardous materials, pipelines, terrorism and transportation emergency. In addition an overview section on climate change has been added although it is not referenced in the development of mitigation strategies.

The Risk Assessment Section gives an overview of the natural and technological hazard threat and which hazards could affect the Puyallup Tribe of Indians Planning Area. It does this through a series of tables, figures and maps included in the Risk Assessment Section. The maps spatially show the location of the hazards that affect the Puyallup Tribe of Indians Planning Area. At this time they do not show the wildland/urban interface fire, nor the area affected by climate change. Since avalanche does not affect the Puyallup Tribe of Indians Planning Area there is no map with the plan.

There is an assumption that the entire Planning Area will be affected by earthquakes, storms, drought and possibly ashfall from the Cascade volcanoes; especially Mt. Rainier. Drought and storms are not shown since their affects are universal, although with minor variations across the County. The maps showing earthquake hazard areas are only the areas with soils that are prone to liquefaction. Similarly the volcano hazard map only shows those areas that can expect lahar inundation.

The technological risks are similar in that civil disturbance, energy emergency, epidemic, and terrorism could affect a portion or the entire Planning Area with minor variations across the County. For this reason there is no hazard map associated with these hazards due to the fact the entire Planning Area is at risk. Hazardous materials spills are a potential threat to the Puyallup Tribe and a variety of hazard maps show this on major roads and railroad lines. The maps are scaled down to view on a parcel level for situational awareness and potential mitigation efforts.

The Risk Assessment Section goes a step further and evaluates the effects of each hazard on the public; on the responders; on the ability of a jurisdiction to maintain operations and deliver services; on property, facilities, and infrastructure; on the environment; on the economic and financial condition; and on the reputation of jurisdictions or organizations that are impacted by it.

The Mitigation Strategy Section describes how mitigation measures are developed based on the Risk Assessment and Capability Identification. The Mitigation Strategy Section builds on the risk assessment and capability identification sections. Each is divided into two parts. The first part is a compilation table showing all the various mitigation measure priorities the jurisdiction has proposed. It shows who is the lead organization and the estimated timeframe when it might be implemented. It also shows which goals the measure addresses.

The second part is comprised of short write ups of all the proposals. Information here was taken from a 12 question form that the Puyallup Tribe of Indians Planning Team filled out and submitted on each proposal. Each of the mitigation proposals includes an update summary of what actions have occurred, and the current status of the progress of these proposals.

The Infrastructure Section is an optional component of the Plan. The Puyallup Tribe of Indians All Hazard Plan only lists the components that the Tribe has included. It was decided that by including a separate section on the Tribe's infrastructure it would help the Tribe focus on their vulnerability and where their mitigation measures could do the most good.

The infrastructure section is exempt from public disclosure pursuant to RCW 42.56.420., and is not a requirement of 44 CFR Part 201. However it was decided to include it to help with an overall understanding of the Tribe's needs. This section includes summary tables of each piece of infrastructures' dependencies and vulnerabilities. The individual infrastructure and mitigation measure however, will be exempt from public disclosure.

The Plan Maintenance Section has three components. The first component involves Plan Adoption. It discusses how the plan will be sent to Washington Emergency Management Division and then on to FEMA as part of the Pre-Adoption Review. Once reviewed and any

modifications requested by the State or FEMA have been made, the plan will be adopted by the Tribe.

The second component discusses how the Tribe must come up with a strategy to implement, maintain and update the plan. These updates must be done at a minimum of every 5 years. Jurisdictions may do it more frequently if they desire.

The final component covers the need for the public to have input into the plan review and update processes.

The Appendices

The Appendices A-F, consist of supplementary material to assist with the understanding of the Plan. This includes a list of acronyms, a glossary and variety of maps. In addition, Appendix A will include the CDR by the Tribal Council to adopt the plan, the final approval letter from FEMA and will contain the histories of previous plan adoption letters by the Tribal Council and FEMA.

Conclusion

This will be forth coming upon the final adoption of the plan.

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