

Section 5

State Level Mitigation Strategy Requirements

MITIGATION STRATEGY: 201.7(c)(3): [The plan **shall** include a] mitigation strategy that provides the Indian Tribal government's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Hazard Mitigation Goals---Requirement §201.7(c)(3)(i):

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

- Does the new or updated plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards?
- Does the updated plan demonstrate that the goals were evaluated and either remain valid or have been revised?

Tribal Capability Assessment---Requirement: §201.7(c)(3) (iv)*:

[The mitigation plan **shall** include] an discussion of the Indian Tribal government's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including: An evaluation of tribal laws, regulations, policies, and programs related to hazard mitigation as well as to development in hazard-prone areas; and a discussion of tribal funding capabilities for hazard mitigation projects.

- Does the new or updated plan include an evaluation of the Indian Tribal government's **pre-disaster hazard management** laws, regulations, policies, programs, and capabilities?
- Does the new or updated plan include an evaluation of the Indian Tribal government's **post-disaster hazard management** laws, regulations, policies, programs, and capabilities?
- Does the new or updated plan include an evaluation of the Indian Tribal government's laws, regulations, policies, programs, and capabilities **related to development** in hazard prone areas?
- Does the new or updated plan include a discussion of the Indian Tribal government's **funding capabilities** for hazard mitigation projects?

Tribal Funding Source---Requirement: §201.7(c)(3) (v):

[The mitigation strategy **shall** include an] identification of current and potential sources of Federal, tribal, or private funding to implement mitigation activities.

- Does the new or updated plan identify current sources of Federal, tribal, or private funding to implement mitigation activities?
- Does the new or updated plan identify potential sources of Federal, tribal, or private funding to implement mitigation activities?
- Does the updated plan identify the sources of mitigation funding used to implement activities in the mitigation strategy since approval of the previous plan?

*Capability Assessment Requirements are published in the Capability Assessment Section.

Local Level Mitigation Strategy Requirements

Mitigation Strategy---Requirement §207.6(c)(3):

[The plan shall include a] mitigation strategy that provides the Indian Tribal government's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Tribal Multi-Hazard Mitigation Goals---Requirement §201.7(c)(3)(i):

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

- Does the new or updated plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards? (Goals are general guidelines that explain what the community wants to achieve. Goals are usually long-term and represent global visions, such as "eliminate flood damage.")
- Does the updated plan demonstrate that the goals were evaluated and either remain valid or have been revised?

Identification and Analysis of Tribal Mitigation Actions---Requirement §201.7(c)(3) (ii):

[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

- Does the new or update plan identify and analyze a **comprehensive range** of specific mitigation actions and projects for **each hazard**?
- Do the identified actions and projects address reducing the effects of hazards on **new** buildings and infrastructure?
- Do the identified actions and projects address reducing the effects of hazards on **existing** buildings and infrastructure?

Implementation of Tribal Mitigation Actions---Requirement: §201.7(c)(3) (iii):

[The mitigation strategy **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the Indian Tribal government.

- Does the mitigation strategy in the new or update plan include how the actions will be **prioritized**? (For example, is there a discussion of the process and criteria used?)
- Does the mitigation strategy in the new or updated plan address how the actions will be **implemented and administered**, including the responsible agency, existing or potential resources, and the timeframe to complete each action?
- Does the **updated** plan identify the completed, deleted, or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (i.e., deferred), does the updated plan describe why no changes occurred?

SECTION 5

PUYALLUP TRIBE ALL HAZARD MITIGATION PLAN 2017-2022 EDITION MITIGATION STRATEGY SECTION

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Mitigation Strategy Development

The hazard mitigation strategy includes a description of mitigation goals to reduce or avoid long-term vulnerabilities to the hazards identified in the Risk Assessment. The mitigation strategy includes sections that identify and analyze a comprehensive range of specific mitigation measures that reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. Facility specific mitigation measures are located in the Facilities Section.

Mitigation strategy development begins with a review of the categories of mitigation goals, as outlined by FEMA. Using this template, and adjusting it to fit the Puyallup Tribe's mission statement, the Planning Team developed goals specific to the Tribe. Through incorporation of the analysis and conclusions found in the Risk Assessment and the Capability Assessment, the Planning Team identified specific mitigation measures and prioritized them through a process of public participation and benefit/cost review tailored to the Tribe's unique needs and capabilities. Central to this entire process is the continual public involvement.

Goals

Goals are general guidelines that explain what you want to achieve. They are usually broad policy-type statements, long term, and represent global visions. However, mitigation goals should be consistent with the state's goals and should not contradict other jurisdiction or community goals such as those expressed in the local comprehensive or general plan.

The Puyallup Tribe of Indians Plan goals are listed as follows:

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

These goals were reviewed with the 2017 update of this plan in April of 2016 for continued relevancy aligning with the Tribes overarching goals. The Planning Team agreed these goals were still current and relevant with the Tribes goals. In addition, the Planning Team reviewed the objectives and each mitigation measure and updated each one with a progress report summary.

To help achieve each goal, the Plan identifies mitigation measures—specific actions or projects that help mitigate risk for the Tribe. The planning process of data-collection, research, and public participation leads to the development of these measures. This process ensures that the measures speak to the risks specific to the Planning Area and that

these measures can be implemented. The Risk Assessment is central to the process of selecting mitigation measures from the Tribe's goals.

The Risk Assessment provides focus for the Tribe's goals through identification of the vulnerability to specific hazards. Based on these hazards, the Planning Team identified specific mitigation measures.

Objectives

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable. Planning team members were encouraged to develop their own specific objectives. They were encouraged to include time frames and specific targets within those time frames as part of their objectives. These objectives then operated as working objectives that were used in the development of the mitigation measures.

Mitigation Measures

Mitigation Measures are specific actions that help to achieve goals and objectives.

The outcomes of the Risk Assessment, specifically the **Population Exposure**, **Infrastructure Exposure**, and **Vulnerability Analysis General Exposure**, illustrate the hazards to which the Planning Area has the most vulnerability. The Risk Assessment provides focus for the Goals through identification of the Planning Area's vulnerability to specific hazards. Based on these hazards, the Planning Team identified their specific mitigation measures.

The mitigation measures are broken down into three categories depending on the implementation mechanism. These are shown on each Mitigation Strategy Matrix. The measures are prioritized within each category. The first category is **Hazard Mitigation Forum (HMF)**. This includes each jurisdiction's membership as part of the Pierce County Hazard Mitigation Forum, a group composed of all County jurisdictions that have an accepted mitigation plan. The second category is **Emergency Management Committee (EMC)** and delineates who will be in charge of pushing forward with each separate mitigation project. The third group includes all **Public Education** programs that the Tribe would like to develop.

Each mitigation measure included has a short write up consisting of 11 points. They are:

- Name of the Measure;
- The Hazards the measure addresses;
- A paragraph explaining what the measure includes;
- The goals addressed;
- Cost of Measure;
- Funding source and situation;
- The Lead Jurisdiction and/or Agency;
- Timeline for implementation;

Who or What benefits;
Life Expectancy of the Measure; and
Community Reaction.

For Multi-Hazard measures, the specific hazards addressed are noted as follows:

A:	Avalanche
E:	Earthquake
F:	Flood
V(l or t):	Volcanic (lahar or tephra-specific)
S(w):	Severe Storm (wind-specific)
L:	Landslide
D:	Drought
WUI:	Wildland/Urban Interface Fire
TS:	Tsunami
AM:	Abandoned Mines
CD:	Civil Disturbance
DF:	Dam Failure
EPI:	Epidemic
EE:	Energy Emergency
HM:	Hazardous Material
PS:	Pipelines
TSM:	Terrorism (evaluation conducted only on certain measures)
TRANS:	Transportation Accidents
All:	All hazards, including some man- made. Where only natural hazards are addressed, it is noted.

The measures having been identified, defined, and evaluated, the rest of the process involves prioritization. The process relies upon the Tribe's identified risks and vulnerabilities, the planning team's expertise, public participation, and the Tribal Council's authority and duty as the jurisdiction's chief elected officials. Over the course of several weeks, the Planning Team presented, outlined, categorically defined, and ranked each mitigation measure (see Table 1-4 Puyallup Tribe of Indians Public Involvement). In order to promote implementation of the measures, they are grouped based on the level at which they will be implemented, as described in the Plan Maintenance Section. These levels are:

- **Hazard Mitigation Forum (HMF):** Multi-jurisdictional implementation mechanism
- **Emergency Management Committee (EMC):** Tribal implementation mechanism
- **Public Education:** Localized level based on targeted communities and their needs and vulnerabilities.

The measures are prioritized within each implementation category. In order to provide consistency, the evaluation process, including the eleven categories, was used as the basis for the prioritization of measures. The process allows for emphasis on the extent to which each measure is cost-effective. While it may be important to emphasize a positive cost/benefit review in the prioritizing of mitigation measures, it is also important to emphasize the influence of regional political factors, community needs and values, historic properties, and habitat and environmental issues upon the selection of specific mitigation measures. Therefore, the prioritization process addresses the Tribe's unique needs, expressed here in terms of the measure's ability to be implemented and the extent

to which it would mitigate one or more relevant hazards. The eleven categories address these issues.

A measure's ability to be implemented is illustrated in Categories 2 (Cost of Measure), 3 (Funding Source and Situation), 4 (Lead Jurisdiction(s)), and 5 (Timeline). The extent to which a measure would mitigate one or multiple hazards is addressed in Category 1 (Goals Addressed) which further helps to encapsulate the Tribe's unique vulnerabilities and needs. The issue of the number of hazards addressed is also inherent in Category 6 (Benefit). For cost benefit review, categories 2, 3, and 5 directly address cost. Categories 6 and 7 (Life Expectancy of Measure) directly address benefit. Category 8 (Community Reaction) indirectly considers both potential costs and potential benefits of the measure in terms of public opinion.

After presentation and discussion, the Planning Team ranked the potential mitigation measures based on goals addressed, with special attention paid to the measure's cost benefit review, its ability to be implemented, and the extent to which it would mitigate one or multiple relevant hazards. The Planning Team combined these rankings into one prioritized list, which the Team then presented to the public for comment. On December 16, 2004 at the Public Comment Meeting, the Planning Team presented each mitigation measure with its draft prioritization to the attendees. The Plan was also available online from December 22nd through January 4th for further review.

After a lapse in time the mitigation measures were further reviewed on April 6, 2011 for current relevance by the Planning Team members. In addition, technological hazards were addressed at this time and added to the plan.

With the update for 2017, the mitigation measures were totally reviewed again with the Planning Team members and with public participation. The Planning Team has documented their review of each measure and the current progress state for each one during April, May and June of 2016 and a few up until February of 2017. This provides a snap shot road map of assessment and possible re-prioritization of measures for when funding becomes available. The documentation is included with each measure. The *Drought Monitoring Program* Mitigation Measure was adjusted to include additional Departments the Tribe will work with and the addition of developing methods for protection of hatchery and acclimation facility water supplies from high temperature impacts. During this review, some of the measures were accomplished and updated to reflect that. In subsequent editions of the plan they will be eliminated from this Section and possibly be included within a new Appendices but the Planning Team felt it was best to document the measure had been completed with this update.

Following the public meetings making any necessary changes, the mitigation measures, publicly salient and meeting the Tribe's unique needs and capabilities, achieved their final prioritization. In so doing, the public, the Tribal Council, and the Planning Team aided in the development of a long-term, cost-effective, environmentally sound, and sustainable mitigation strategy.

Each measure's priority is presented in the following format using the acronyms above:

“Hazard(s) Addressed-Implementation Mechanism-Ranking”

For example, the Continuity of Operations Planning measure may be prioritized as follows:

“Priority: MH-EMC-7”

Thus it would be the seventh ranked measure within the Emergency Management Committee implementation mechanism for addressing multi-hazard vulnerabilities.

The following mitigation measures are organized by hazard, with multi-hazard measures presented first. Table 5.1 is a summary of the mitigation strategy for the Puyallup Tribe of Indians. Following the table is a detailed strategy of each mitigation measure.

Facility mitigation measures are covered in Section 6. Table 6.1 is a summary of the mitigation strategy for the Tribe’s Facilities. Following the table is a detailed vulnerability assessment and mitigation strategy of each facility.

Table 5-1 Puyallup Tribe of Indians Mitigation Strategy Matrix

Implementation Mechanism	Mitigation Measure	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals Addressed					
				Life and Property	Emergency Services	Public Preparedness	Partnerships for Implementation	Natural Resources	Sustainable Economy
<u>Startup</u>	1. Plan Maintenance	Puyallup Tribe - Administration	Ongoing	✓	✓	✓	✓	✓	✓
Multi-Hazard									
<u>HMF</u>	2. Hazard Mitigation Forum	Puyallup Tribe; PC DEM	Ongoing	✓	✓	✓	✓	✓	✓
<u>EMC</u>	1. Emergency Management Committee	Puyallup Tribe (Public Safety)	Completed	N/A					
	2. Emergency Management Services	Puyallup Tribe (Public Safety; Administration); PC DEM	Ongoing	✓	✓	✓	✓	✓	✓
	3. Comprehensive Planning	Puyallup Tribe (Planning)	Ongoing	✓	✓	✓	✓	✓	✓
	4. Develop/Adopt HIVA –	Puyallup Tribe (Public Safety; GIS; Council); PC DEM	Completed	N/A					
	5. Develop/Adopt CEMP	Puyallup Tribe (Public Safety; Council); PC DEM	Completed	✓	✓	✓			✓
	6. All-Hazard Mitigation Plan	Puyallup Tribe (Public Safety; Administration; Planning; Health Authority); PC DEM	Completed	N/A					
	7. Continuity of Operations Planning	Puyallup Tribe (Administration; Public Safety; PII; Gaming Authority); PC DEM	4-6	✓					✓
	8. Critical Facilities	Puyallup Tribe (Administration; Public Safety; Planning; Fisheries; PII; Gaming Authority); PC DEM	1-3	✓	✓				✓
	9. Warning Systems	Puyallup Tribe (Public Safety; Administration; Chief Leschi School; Planning); PC DEM; Port of Tacoma; Federal Warning Systems, WA EMD	4-6	✓	✓	✓	✓		
	10. Tribal Housing Program: Retrofit/Relocation	Puyallup Tribe (Housing Authority; Planning)	4-6	✓					
	11. Home Survival Kits	Puyallup Tribe (Administration; Public Safety); American Red Cross; PC DEM	1-3	✓		✓			✓
<u>Public Education</u>	1. Public Education Campaigns: All Hazards	Puyallup Tribe (Administration; Public Safety); PC DEM	Ongoing			✓	✓		✓

Implementation Mechanism	Mitigation Measure	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals Addressed					
				Life and Property	Emergency Services	Public Preparedness	Partnerships for Implementation	Natural Resources	Sustainable Economy
Earthquake									
EMC	1. Non-Structural Retrofitting	Puyallup Tribe (Administration; Public Safety; Planning); PC DEM	Ongoing	✓	✓				✓
Public Education	1. Earthquake Home Retrofit Program	Puyallup Tribe (Administration; Public Safety; Emergency Home Repair); PC DEM	4-6	✓		✓	✓		✓
Flood									
HMF	1. Long-Term Puyallup Basin Flood Issue	Puyallup Tribe (Administration; Planning; Fisheries; Natural Resources; Shellfish; Council); City of Tacoma; City of Fife; City of Puyallup; Pierce County Water Programs	4-6	✓			✓	✓	✓
	2. Flood Control Infrastructure	Puyallup Tribe (Planning; Natural Resources; Fisheries); City of Tacoma; City of Fife; City of Puyallup; Pierce County Water Programs	4-6	✓	✓			✓	✓
EMC	1. Floodplain Ordinance and Resolution	Puyallup Tribe (Planning; Administration; Council)	Ongoing	✓				✓	✓
	2. Join NFIP	Puyallup Tribe (Planning; Administration; Council); FEMA; WA DOE	Ongoing	✓		✓		✓	✓
	3. Surface Water Reduction	Puyallup Tribe (Planning)	4-6	✓				✓	✓
Public Education	1. Public Education: Flood	Puyallup Tribe (Planning; Administration) Pierce County Water Programs	Ongoing			✓		✓	✓
Volcanic Hazard									
HMF	1. Lahar Warning Siren	Puyallup Tribe (Public Safety; Administration; Chief Leschi School; Planning); PC DEM; Port of Tacoma; WA EMD	Complete with ongoing maintenance	✓	✓	✓	✓		
	2. Dam Draw Down Agreements	Puyallup Tribe (Natural Resources; Fisheries; Administration); PC DEM; Facility Owners	4-6	✓			✓	✓	✓
	3. Lahar Flow Control	Puyallup Tribe (Administration); PC DEM	4-6	✓			✓	✓	✓

Implementation Mechanism	Mitigation Measure	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals Addressed					
				Life and Property	Emergency Services	Public Preparedness	Partnerships for Implementation	Natural Resources	Sustainable Economy
EMC	1. Evacuation Planning	Puyallup Tribe (Planning; Public Safety; Administration); PC DEM	1-3	✓		✓	✓	✓	✓
Public Education	1. Public Education: Volcano	Puyallup Tribe (Administration; Public Safety); PC DEM	Ongoing			✓			✓
Severe Storms									
EMC	1. Tree Maintenance Program	Puyallup Tribe (Maintenance); PC Community Services (Coop. Ext.)	4-6	✓		✓	✓	✓	
Public Education	1. Public Education: Severe Storms	Puyallup Tribe (Administration); PC DEM	Ongoing			✓			
Landslide									
HMF	1. Risk Assessment: Occurrence Map	Puyallup Tribe (GIS); PC DEM; PC GIS; WA DOE; USGS	4-6	N/A					
Public Education	1. Public Education: Landslide	Puyallup Tribe (Administration); PC DEM	Ongoing			✓			✓
Tsunami									
HMF	1. Tsunami Inundation Zone Maps	Puyallup Tribe (GIS); PC DEM; WA EMD; USGS; WA DOE	Completed	N/A					
	2. Tsunami Warning Sirens	Puyallup Tribe (Administration; Public Safety); PC DEM; WA EMD; USGS; WA DOE	4-6	✓	✓	✓	✓	✓	✓
Public Education	1. Public Education: Tsunami	Puyallup Tribe (Administration; Public Safety); PC DEM; WA EMD; USGS; WA DOE	Ongoing			✓			✓
Drought									
HMF	1. Drought Monitoring Program	Puyallup Tribe (Fisheries; Natural Resources); WA DOE; NOAA	Ongoing	✓	✓	✓	✓	✓	✓
Public Education	1. Public Education: Drought	Puyallup Tribe (Fisheries; Natural Resources); Pierce County Water Programs; WA DOE	Ongoing			✓		✓	✓

HMF = Hazard Mitigation Forum

EMC = Emergency Management Committee

* These groups are described further in related mitigation measures below as well as in the Plan Implementation Section. They represent the levels and mechanisms of implementation.

Startup Mitigation Measures

Plan Maintenance

The Puyallup Tribe will adopt those processes outlined in the Plan Maintenance Section of this Plan.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s)** = City of Buckley - Administration
5. **Timeline** = Ongoing
6. **Benefit** = City-Wide
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
<p>The plan was formally adopted by the Puyallup Tribal Council on April 18, 2012 by Council Determination report #558. The Tribe has implemented the Plan Maintenance Section over the course of the previous five years, implementing some of the identified mitigation strategies, continuing with their Public Education program, the Emergency Management Committee meeting on a monthly bases and participating in the annual Hazard Mitigation Forum through Pierce County DEM. A more detailed description of how these were accomplished is outlined under each mitigation measure. The public involvement continues through such events as the Benefits Fair, Public Education campaigns and the Emergency Management Committee reaching out to their departments as well as through the Tribal News.</p> <p>This will continue with the 2017 – 2022 edition of the All Hazards Mitigation plan.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Multi-Hazard Mitigation Measures

Many mitigation programs and projects address multiple hazards. Several of these programs provide public education and information and although they are necessary staples of mitigation, their effectiveness is hardly possible to calculate in firm cost/benefit terms.

Priority: MH-HMF- 1

Hazard Mitigation Forum

Hazards: All

The Forum will function as a means of coordinating mitigation planning efforts among all jurisdictions that share geopolitical boundaries with Pierce County. The Tribe will participate in the Hazard Mitigation Forum (HMF). This will ensure efficient use of resources and a more cooperative approach to making a disaster resistant region. The HMF will meet annually, every October/November. This is addressed in the Plan Maintenance Section of this Plan.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = Minor
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s)** = Puyallup Tribe; PC DEM.
5. **Timeline** = Ongoing
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Tribe participates in the Pierce County Hazard Mitigation Forum (HMF) on an annual bases when held. The Tribe also participated in the Pierce County Hazard Risk Assessment Workshop held on October 19, 2015. The information collected at this workshop was incorporated into the Pierce County Hazard Identification Risk Assessment (HIRA) that the Tribe has adopted to identify their hazards. This will continue with the 2017 – 2022 edition of the All Hazards Mitigation plan.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 1

Puyallup Tribe Emergency Management Committee

Hazards: All

The Tribe will establish the Puyallup Tribe Emergency Management Committee (EMC). The EMC will serve to coordinate and oversee emergency management issues, and in particular will be charged with coordinating, evaluating, and updating mitigation planning efforts within the Tribe. This will ensure efficient use of resources and a more cooperative approach to making a disaster resistant Tribe. The EMC will meet bi-annually to merge with the normal Tribal budgetary processes. This is addressed in the Plan Maintenance Section of this Plan.

1. **Goal(s) Addressed** = N/A. Goals addressed are contingent upon the mitigation measures resulting from this priority.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety).
5. **Timeline** = Short-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Puyallup Tribe established the Puyallup Tribe Emergency Management Committee (EMC) years ago through a Council Determination Report (CDR) and meets monthly to coordinate and oversee emergency management issues. The EMC consists of a variety of Tribal Departments and in some cases there is multiple representation from those individual departments. The EMC coordinates planning efforts with multiple plans to include but not limited to; the All Hazards Mitigation Plan, Comprehensive Emergency Plan (CEMP) and recently has started in the development of individual departmental Continuity of Operations Plans (COOP). In addition, training and participation in outside jurisdictional exercises are discussed and shared with the group. This collaborative effort amongst the Departments allows for program integration helping to make a disaster resistant Tribe. The Public Safety Director meets annually to discuss the budgetary process.			

Origin

Previous Plan	Current Plan
✓	✓

Emergency Management Services

Hazards: All

The Tribe will establish an emergency management program to ensure coordination among the various jurisdictions with which it shares political boundaries. This will increase the tribe's effectiveness in mitigation, preparedness, response, and recovery and will aid in the implementation of all measures of this plan. The Tribal Emergency Management agency will help secure the Tribe's interests and populations with regards to natural and manmade disasters. The Tribe may develop its own emergency management agency or contract services to a neighboring agency.

The Tribe will establish a grant program within the Emergency Management Agency through which it can assist in the establishment and maintenance of programs and plans as the 'pass through agency' for various federal grants.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Emergency Management Program Grant; 2% Gaming Money; local budgets and grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety; Administration); PC DEM.
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Tribe coordinates amongst jurisdictions with which it shares political boundaries through a variety of ways. The Tribe works with Pierce County not only through their mutual Emergency Management Programs but Law Enforcement, Public Works and Surface Water Management. These strong working relationships increase the Tribes effectiveness in mitigation, preparedness, response, and recovery. The Tribe participates in the Local Emergency Planning Committee (LEPC) with multiple jurisdictions on emergency response planning and training exercises with Pierce County Emergency Management, Port of Tacoma, Washington State Emergency Management and neighboring jurisdictions. These are just a highlighted few programs the Tribe coordinates emergency management efforts with. Currently the Tribe is in the process of developing a contract with Pierce County for Emergency Management Services. The Tribe will be looking into the HMPG and PDM grants as possible funding sources for the continuance of their Emergency Management programs.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 3

Comprehensive Planning

Hazards: All

The Tribe will develop a Comprehensive Plan that includes a Land Use Element. Currently, the Tribe consults the land use and building codes of the City or County which shares the parcel in question. The Tribe is currently planning to consolidate these different guidelines into a Tribal Comprehensive Plan. The Plan will function in a similar fashion to that of a city or county, dealing with issues of land use, building codes, the environment, etc. The plan may include elements such as citing critical facilities and natural hazard reduction. Various ad hoc committees will aid in the development of each element of the comprehensive plan.

Members of Pierce County Emergency Management will assist the Tribe with hazard information so that land use regulations can address these areas.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be accomplished with local budgets or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning).
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area and Facility Specific
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe is continuing the process of developing a Comprehensive Plan. The Tribe still consults the land use and building codes of the City or County which shares the parcel in question. Due to the checker board parcels of Tribal Trust Lands across City and County borders and unknown potential future land purchases contributes to the difficulty in developing a Comprehensive Plan for the Tribe.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 4

Develop/Adopt HIVA

Hazards: All

The Tribe will develop a Hazard Identification and Vulnerability Assessment (HIVA). The HIVA will build from the information contained in this plan to include man-made hazards. This will form the basis for emergency management planning and is an essential part of the CEMP but requires its own development process.

The HIVA will incorporate hazard modeling using HAZUS-MH which maps potential economic impacts of earthquake and flood events

1. **Goal(s) Addressed** = N/A. Goals addressed are contingent upon the mitigation measures resulting from this priority.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety; GIS; Council); PC DEM.
5. **Timeline** = Short-Term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
<p>The Tribe has adopted the Pierce County Hazard Identification Risk Assessment (HIRA) and embedded this into the All Hazards Mitigation Plan. The PC HIRA covers all 19 hazards to include geological, meteorological and technological/man made. Within the reservation boundaries all 19 hazards do not exist but many Tribal members live off the reservation and maybe exposed to these hazards in other parts of Pierce County. Therefore all 19 hazards are identified within the plan.</p> <p>The reservation boundary is identified specifically and referred to as the “Planning Area” throughout all the hazards under the <i>Vulnerability</i> sub-title. Detailed stories from the Elders was shared with planning team members and included here. These stories were an important part of the Puyallup Tribe’s survival during the hazardous and catastrophic events they encountered for hundreds of years.</p> <p>The planning team is currently going through an update of the infrastructure the Tribe has purchased over the past few years. Detailed information will be collected on the specific buildings and will allow for HAZUS-MH scenario modeling producing economic and social impacts of earthquake and flood events both of which the Tribe is vulnerable to.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 5

Develop/Adopt CEMP

Hazards: All

The Tribe will develop a Comprehensive Emergency Management Plan (CEMP) that will direct mitigation, preparedness, response, and recovery actions. This plan will be referenced therein and will substitute for the mitigation section of the CEMP.

A CEMP is a prerequisite of having an “established emergency management program.” The CEMP is a written basic plan with elements which address all natural and man-made emergencies and disasters to which a political subdivision is vulnerable. The CEMP specifies the purpose, organization, responsibilities and facilities of agencies and officials of the political subdivision in the mitigation of, preparation for, response to, and recovery from emergencies and disasters [WAC 118-30-030 (9)]. Local CEMPs must specify the use of the incident command system for multi-agency/multi-jurisdiction operations. The local CEMP must be consistent with the state CEMP, in order that the local and state organizations are coordinated (RCW 38.52.070).

The CEMP will outline the following:

- A strategy for public education;
- Response SOPs relating to each hazard;
- Recovery SOPs for damage assessments, debris management, and a short- and long-term recovery plan;
- Mitigation strategy will reference this document.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety; Council); PC DEM.
5. **Timeline** = 1-5 years
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Tribe completed their CEMP in 2014 with a couple of additional updates. SOPs still			

need to be completed for damage assessments, debris management, and short and long term recovery plan and strategies for public education. This will be something the Public Safety Department, Tribal Council and PC DEM will continue to develop over the next few years. The timeline is being changed from short-term to 1-5 years to develop all the additional SOPs.

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 6

Continuity of Operations Planning

Hazards: All

The Tribe will ensure continuity of operations in both tribal government and tribal business operations through the following measures:

- Ensure that all essential records are protected and/or provided with safe back up. Currently most records are backed up in Everett, WA. The Tribe will examine alternative locations where storage would not be affected by a Cascadia Subduction event.
- Develop a line of succession for its governing body, the Tribal Council. Should members be rendered unavailable during or following an emergency or disaster, those positions with decision-making authority will have been previously designated.
- Develop business continuity plans for PII, the Emerald Queen Casino Holdings, and the various other businesses on trusted property.
- Develop a comprehensive Disaster Recovery Plan. This will be a pre-event plan for post-disaster recovery and reconstruction, composed of policies, plans, actions and responsibilities. It will include an element of business resumption and long-term economic sustainability. There will be an emphasis on the transition of recovery to mitigation and the synergy of these two phases of emergency management.

1. **Goal(s) Addressed** = Ensure Emergency Services; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants. Funding could be obtained through a federal or state mitigation grant.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety; PII; Gaming Authority); PC DEM.
5. **Timeline** = Long-term
6. **Benefit** = Planning Area and Facility Specific
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓	✓	

Comments
<p>The Planning Team is currently working on, with their departments to develop department Continuity of Operations (COOP) plans. These plans are the bases to ensure essential functions are maintained in both tribal government and tribal business operations following an event.</p> <p>The IT Department is looking at alternate sites for data back up and the Planning Team is looking at alternate sites for their departments. Many of the Tribal Departments are scattered throughout the reservation and it is not common knowledge of building accommodations. Are they hot, warm or cold facilities?</p> <p>Monthly planning meetings are rotating between the departments to give the planning team an opportunity to see and tour the facilities for their possible alternate sites. Each of the departments are at vary phases in the development of their departmental COOP Plans. This will be a continuing mitigation measure that will be carried into the next edition of the Tribe's Mitigation Plan. Business Continuity of Operations Plans and Disaster Recovery Plans still need to be developed too.</p>

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 7

Critical Facilities

Hazards: All

The Tribe will undergo a comprehensive analysis and mitigation of its critical facilities and contents. This will involve the following (any other facility-specific measures are outlined in that section):

- Continue the effort to catalogue all holdings and assets, and use the information to further update its critical facilities section.
- Install generators for all identified critical facilities without adequate auxiliary power.
- Provide access limitation security to all facilities requiring that level of security. This will occur in accordance with the FEMA 426 planning recommendations.
- Perform a structural analysis of older critical facilities to determine which may be in need of retrofits, elevations, or replacement.
- Include non-structural mitigation of facilities for all hazards when performing an earthquake structural retrofit.
- Place utilities to critical facilities underground to limit the potential damage to infrastructure as well as damage to life and property. This is particularly important in the areas immediately surrounding fire stations and main access routes as well as areas requiring higher response volumes.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants. Funding could be obtained through a federal or state mitigation grant.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety; Planning; Fisheries; PII; Gaming Authority); PC DEM.
5. **Timeline** = Short-term
6. **Benefit** = Facility Specific
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>The Planning Team is currently in the process of undergoing a comprehensive analysis of its critical facilities and this information will be used to further enhance the modeling scenarios utilized in the HAZUS mapping program. This valuable information will provide the Tribe with a detailed summary sheet on economic and social impacts following a disaster allowing them to better prepare and plan for events.</p> <p>The Tribe is planning to look into planning grants in order to have a structural analysis of their older critical facilities to determine which are in need of retrofits, elevations, or replacement. Once this is completed additional grants will help support funding for retrofit projects.</p> <p>The Tribe has provided generators for the Tribal jail, Administration Building, Chief Leschi School, the Casino and IT. The IT Department has installed solar panels for IT equipment.</p> <p>With the construction of new buildings, the Tribe is placing underground utilities at these sites. This includes the Youth Center, Elders Building, NE Housing Project and all new development of future projects.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Warning Systems

Hazards: All

The Tribe will continue to work with PC DEM in establishing all hazards warning sirens throughout the valley. Currently there are several 'dead spots' where the sirens cannot be heard, including in the Port of Tacoma. Before placing any sirens in the Port, the Tribe, WA State EMD, and PC DEM will explore the possibility of using the sirens as both tsunami and hazardous material warning systems.

The Tribe will assist in providing all hazards radios to Tribal members. Those living in the valleys will be given higher priority due to their increased vulnerability. The Tribe will install NOAA All Hazards Radios in all Tribal facilities and train employees in the radio's use. For those facilities which are permanent and Tribe-owned, the Tribe will wire the NOAA radio into the public address system. NOAA Weather Radio, with the Federal Communication Commission's (FCC) Emergency Alert System, is an "all hazards" radio network, making it the single source for the most comprehensive emergency information available to the public. NOAA All Hazards Radio also broadcasts warning and post-event information for all types of hazards: ranging from earthquake and volcano activity to chemical releases or oil spills.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = Siren: \$40,000. Radios: TBD.
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety; Administration; Chief Leschi School; Planning); PC DEM; Port of Tacoma; Federal Warning Systems, WA EMD.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Pilot (life of unit)
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
Over the past few years the Port of Tacoma has purchased seven sirens through grants. Five of these sirens are stationary and two are portable. The City of Fife has purchased outdoor warning sirens and replaced old ones. Two additional sirens are located by the I-5 EQC and Chief Leschi School. Constant good communication between Chief Leschi School and PC DEM regarding the siren sounding during monthly tests of the system. Chief Leschi School will report immediately to PC DEM if the monthly siren test is not heard, allowing for immediate mitigation of the system. In addition, the AM 1580 radio station was expanded and covers the Fife area to broadcast emergency evacuation information.			
In addition, the Tribe has purchased and placed NOAA Weather Radios at the Tribal			

Police Department, Administration Building, Chief Leschi School, and the Grandview Early Learning Center. The Tribe will continue to assist and provide all hazards radios to facilities that are located within the valleys at risk.

Origin

Previous Plan	Current Plan
✓	✓

Priority: MH-EMC- 9

Tribal Housing Program

Hazards: EQ, FL, V, L, TS, DF, EPI,

The Tribe will direct its Tribal Housing Program away from hazard areas and retrofit/replace those structures that are considered especially vulnerable to hazards. Currently, the Tribe owns facilities which serve as apartments for tribal members. Some of these have experienced flooding in the past and others may be deemed unsafe in the event of an earthquake. These structures will be replaced and/or moved to lessen their vulnerability to the earthquake and flood hazards.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through federal grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Housing Authority; Planning).
5. **Timeline** = Long-term
6. **Benefit** = Facility Specific
7. **Life of Measure** = Life of structure.
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
<p>The Puyallup Tribe received the 2012 Leadership in Energy and Environmental Design (LEED) for Homes award for Innovative Project. The Puyallup Longhouse project, The Place of Hidden Waters, is a new model in culturally and environmentally responsive housing for the Puyallup Tribe. The Tribe has created its own self-sustaining model.</p> <p>This LEED for Homes Platinum Certified Housing project includes 10 apartments of housing for tribal members, both families and elders. The project includes a community building, future sweat lodge, remodel of existing gym, maintenance building and restoration of an adjacent habitat corridor. Rain gardens and native plants help to provide a natural setting, minimize irritation, and protect the Puget Sound from runoff. Outdoor amenities include a dance arbor, playground, salmon bake pit, sweat lodge area and walking trails.</p> <p>It is located on the Puyallup Reservation in NE Tacoma and away from vulnerability to many hazards and adjacent to 27 units of Puyallup Tribe Housing Authority (PNHA) rental townhouses built in the 1980s. This site has been identified as an evacuation site for the Youth Center. This project utilized \$3.8M of American Recovery and Reinvestment Act grants and Indian Housing Block Grant (HUD) and created 46 jobs.</p>			

Origin

Previous Plan	Current Plan
✓	✓



Distribute Home Survival Kits and Shelter-In-Place Supplies

Hazards: All

The Tribe will develop a program for distributing home survival kits and shelter-in-place supplies to all tribal members.

1. **Goal(s) Addressed** = Protect Life and Property; Increase Public Preparedness; Promote A Sustainable Economy.
2. **Cost of Measure** = Minor
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety); American Red Cross; PC DEM.
5. **Timeline** = Short-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓	✓	
Comments			
<p>Ten years ago home survival kits for the housing tenants were purchased. After finding out this wasn't an allowable cost they had to be returned. Since that time survival kits for the Set Aside Housing Program have been purchased for all their employees and information was passed out to tribal members on the importance of being prepared.</p> <p>Each month at the Public Safety Meeting, representatives from the Tribal Departments received information on preparedness to disperse amongst their departments. In addition, Pierce County Emergency Management publishes a monthly preparedness newsletter that can be electronically emailed to all department employees. This preparedness information describes the various ways to develop office and personal home survival kits. September is Preparedness month and campaigns are launched to encourage gathering of supplies amongst tribal members.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Public Education Campaigns: All Hazards

Hazards: All

The Tribe will continue to deliver public education campaigns many times throughout the year. The Tribe will expand on these existing programs to reach audiences ranging from preschoolers to senior citizens, on topics from appropriate use of 911 to organizing communities for disaster response (i.e., PCNET). In general these programs focus on preparing citizens to prepare for and respond to disasters. Such programs are critical to reminding the public of the natural hazards in the region, and of the necessity of having on hand the supplies and materials to survive independently for a minimum of 72 hours.

These campaigns may include a neighborhood-oriented approach to emergency preparedness and homeland security. Currently Pierce County offers a Pierce County Neighborhood Emergency Teams (PC NET) program. The program helps individuals and their neighborhoods prepare to mutually assist each other so that lives can be saved, property can be spared, and emergency services can be freed to respond to the most devastated areas. This is accomplished by organizing block groups into a variety of disaster response teams, each of which has a simple one-page list that clearly outlines necessary tasks. The Tribe will work with the County on establishing like programs in the Reservation.

1. **Goal(s) Addressed** = Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = Varies
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants. Funding could be obtained through a federal or state mitigation grant.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety); PC DEM.
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area
7. **Life of Measure** = Varies
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe continues with their public education campaigns throughout the year on a variety of programs to reach broad audiences. The Tribal Housing Program hosted Pierce County Emergency Management (PC DEM) to discuss the PC NET program to the neighborhood about preparedness and organizing neighborhoods to prepare mutually and develop a neighborhood preparedness plan. In addition, the Housing Department also had PC DEM present in their workplace on personal preparedness in their homes and at work. The Youth Center has had PC DEM come speak to the children on the appropriate use of 911. On a broader scope the Emergency Planning Team had a booth set up at the Tribes “Benefits Fair “ and discussed and passed out preparedness			

information, information on an alert program and discussed the Tribe's All Hazard Mitigation Plan. Hazard maps were on display to educate Tribal members on the potential hazards they may face within the reservation and within Pierce County.

The Tribe also participates with the annual *Shake Out* earthquake exercise and works with PC DEM in displaying the exercise information on the EQC reader board along Interstate 5. This provides not only a venue for public awareness for tribal members but several counties as well in Washington. The I-5 corridor is the principal north-south motor route on the West Coast with thousands of motorists traveling it daily. Further preparedness in this exercise involves all the departments participating in the drill annually and building each year on their involvement. It is with great hopes this year in 2016, the departments will evacuate their buildings following the initial earthquake, do a damage assessment of the infrastructure reporting that in and an accountability of staff after evacuating the buildings. WA-EMD has provided a plethora of information on the exercise and planning for it is taking place now with a strong preparedness focus.

The Tribe will on occasion publish in the *Puyallup Tribe News*, preparedness information. The PC NET program publishes a monthly "Tidbit News" that the *Puyallup Tribe News* has used. This Tidbit News article is distributed monthly to the Tribal Departments.

These campaigns will continue over the next five years with the Mitigation Plan update hoping to reach a broader audience. Preparedness is a critical component to saving lives and property during disasters.

Origin

Previous Plan	Current Plan
✓	✓

Earthquake Mitigation Measures

Priority: EQ-EMC 1

Non-Structural Retrofitting

The Tribe will perform non-structural retrofits for all of its owned facilities. The Tribe will incorporate non-structural seismic retrofitting into the normal procedures that accompany any remodel projects.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety; Planning); PC DEM.
5. **Timeline** = Short-Term
6. **Benefit** = Facility Specific
7. **Life of Measure** = Life of non-structural action.
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe will continue to work with PC DEM on non-structural retrofits of all its owned facilities. Although many non-structural retrofits have been done to the Administration building and the Grandview Early Learning Center this will be an ongoing effort as people change jobs and offices are rearranged and the consistent need for non-structural retrofits will always continue. This was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to <i>on-going</i> to reflect the continued need for maintaining this mitigation measure. The Grandview Early Learning Center was non-structurally retrofitted on June 18, 2005 by the Kids Corps Childcare Retrofit Program, a joint public/private partnership to protect children at not-for-profit childcare centers throughout Pierce County. This program was funded by Citizen Corps grants and donations from local businesses supporting the work done by the PC Kids Corps volunteers and brought many volunteers together for the day to complete the work at the Center.			

Origin

Previous Plan	Current Plan
✓	✓

Earthquake Home Retrofit Program

The Tribe will seek to provide home retrofits for all tribal members through a program modeled after the Home Retrofit Program in Seattle, WA. Insurance industry, building contractor, and real property partners should be sought to support this program. For example, the insurance industry could distribute home retrofit information to owners/occupants of pre-1970 homes, especially when homeowners are seeking hard to obtain earthquake insurance. This will reduce the total amount of uninsured damages due to earthquakes.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = TBD
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety; Emergency Home Repair); PC DEM.
5. **Timeline** = Long-Term
6. **Benefit** = Planning-Area and residential Facilities
7. **Life of Measure** = TBD
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe is currently working with Pierce County Department Emergency Management to have their Public Educator facilitate an all hazards program presentation to Tribal Employees within their working departments during the 2017 year with the intent of repeating this training on a two year cycle. This program/training will include preparedness in the workplace home and vehicle environments. Handouts on preparedness and suggestions of what to include in 3 day, 7 day and longer duration kits will be provided. Information on earthquake preparedness will be included in this training as well as how to prepare your home environment for it. The Puyallup Tribe Children's Services Department were first to hear a part of the training on November 18, 2016.			

Origin

Previous Plan	Current Plan
✓	✓

Flood Mitigation Measures

Priority: FL-HMF- 1

Long Term Puyallup Basin Flooding

The Tribe will work with the various local jurisdictions in the Puyallup Valley and with the State, FEMA, and Army Corps of Engineers to find a long-term sustainable method of reversing the steadily increasing flood hazard along the Puyallup River and its tributaries. As more silt accumulates along the riverbed, the river level rises leading to more frequent and severe floods. Measures whose feasibility should be examined include a system of setback levees and elevating the existing levee. Any solution will involve consideration of the salmon habitat protection that is of high priority to the Tribe.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants. Army Corps of Engineers Project grant.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Planning; Fisheries; Natural Resources; Shellfish; Council); City of Tacoma; City of Fife; City of Puyallup; Pierce County Water Programs.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
This will be a continuing long term measure involving multiple jurisdictions. The Puyallup Tribe does not have jurisdictional authority on the levee banks but does participate in and on multiple committees addressing the flooding issues of the Puyallup River and its tributaries. One of those committees is the Pierce County Flood Control Zone District Advisory Committee. This Committee meets bi-monthly to address flood management needs and is made up of 15 members to make recommendations on various budget and policy issues and project priorities. The committee has an annual work plan they develop along with guidelines providing the framework for their policy decisions. The Army Corps of Engineers is proposing some flood control measures along the Puyallup River to multiple sites although much discussion will need to follow concerning the proposed projects.			

Origin

Previous Plan	Current Plan
✓	✓

Flood Control Infrastructure

The Tribe will design and construct new facilities which enhance flood storage during storm events such as ponds, setback levees, and upsized culverts. These may include:

- **Retention/Detention Ponds**
- **Permanent Pump Station**
- **Setback Levees**
- **Culvert Replacements**

The Tribe will also work with the State, County and Cities in maintenance flood control infrastructure (e.g. ponds, levees, and revetments) to reduce the chance of failure during flood events and to optimize their storage capacity. This will ensure that they are able to function optimally during flood events.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Preserve or Restore Natural Resources; Promote A Sustainable Economy;
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = County's Surface Water Management Utility Fee, REET funds. Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning; Natural Resources; Fisheries); City of Tacoma; City of Fife; City of Puyallup; Pierce County Water Programs.
5. **Timeline** = Long-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Life of structure
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>The Tribe is very limited on what they can do specifically with the design and construction of new facilities to enhance flood storage. The Tribe continues to work with State, County and Cities with the maintenance flood control infrastructure to reduce the chance of failure during flood events while protecting the environment to ensure further degradation does not occur in habitat. The Tribe back in 2009 lost almost two acres of land due to flooding on the Wilkeson Creek in Wilkeson. Over the past six years the Tribe has worked with FEMA, WA-EMD, WA-ACE, FDWF and other jurisdictions in the development of steelhead acclimation ponds as mitigation projects to prevent further land loss due to flooding along the creek and help save the steelhead run. This project will enhance the environment and provide additional rearing for salmonid species.</p> <p>Unfortunately, fish enhancement and hatchery facilities are dependent upon high volume water sources and high exchange rate rearing spaces to maximize fish health and growth rates. This requirement often means that such facilities are in close proximity to streams and rivers and therefore prone to flood and land slide risks.</p>			

It is important to note that each of our fish enhancement and hatchery facilities produce fish that are available to all fisherman not just tribal members. Long term fish tagging programs prove that Puyallup origin fish are caught routinely throughout Puget Sound, the Straights of Juan de Fuca, Alaska and British Columbia. The broad influence of these facilities toward fish production contributes to their regional importance throughout the northwest.

The Wilkeson Creek Rearing facility is scheduled to be redeveloped this year, 8 years after the flood event which destroyed much of the fish rearing capacity of the site. The facility will be completed with enhanced flood protection via an engineered revetment designed to mimic the form and function of a natural stream bank complete with log jams, refuge habitat and replanted riparian tree and vegetation using endemic northwest species.

The water supply system will also utilize an improved surface water diversion structure that prevents wild fish in Wilkeson Creek from being entrained and diverted into the rearing ponds. It will also include a unique ground water collector system designed to provide cool, hypoxic water to the facility during low summer flow conditions.

Funding for this project was available from the FEMA Public Assistance Program (DR-1817), under the Permanent Work Category. Projects falling under this category are required to restore a damaged facility, through repair or restoration, to its pre-disaster design, function, and capacity in accordance with the applicable codes and standards. FEMA assisted with 75 percent of the funding, Washington State assisted with 12.5 percent and the Puyallup Tribe contributed 12.5 percent

Origin

Previous Plan	Current Plan
✓	✓

Priority: FL-EMC- 1

Floodplain Ordinance and Resolution

The Tribe will adopt an ordinance that outlines floodplain regulations which can significantly reduce the potential for flooding to negatively impact drinking water sources, pipelines, septic systems, sewer lines, and water lines that intersect flood hazard areas. In the event that a structure or utility feature must be located within a flood hazard area, practical and effective mitigation measures will be pursued to reduce potential damage to those facilities.

1. **Goal(s) Addressed** = Protect Life and Property; Preserve or Restore Natural Resources; Promote A Sustainable Economy
2. **Cost of Measure** = Minor
3. **Funding Source and Situation** = TBD.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning; Administration; Council).
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe does not currently have an ordinance that outlines floodplain regulations and continues to work toward developing one.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: FL-EMC- 2

Join NFIP

The Tribe will evaluate joining the National Flood Insurance Program (NFIP). This will aid the Tribe in developing building standards to mitigate the flood hazard. The Tribe will also pursue a variety of measures that will help it achieve a lower Community Rating System (CRS) rating.

1. **Goal(s) Addressed** = Protect Life and Property; Increase Public Preparedness; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = TBD
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning; Administration; Council); FEMA; WA DOE.
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Puyallup Tribe is still evaluating joining the National Flood Insurance Program. The Tribe is limited with the lands they can purchase and that are not in a designated floodplain. The majority of their Tribal Trust lands currently are within the floodplain along the Puyallup River.			

Origin

Previous Plan	Current Plan
✓	✓

Surface Water Reduction

The Tribe will develop and implement Low-Impact Development Standards, and will encourage Low-Impact Development through model projects. This will help to reduce peak flow impacts commonly associated with increased impervious cover. The Tribe may adopt Low Impact Development Standards as the normal building standard. The Tribe will target a few specific new development projects over the next several years as low impact developments. As part of the Tribe's low impact development standards, the Tribe will explore the use of pervious or semi-pervious material in parking lots.

1. **Goal(s) Addressed** = Protect Life and Property; Preserve or Restore Natural Resources; Promote A Sustainable Economy
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = County's Surface Water Management Utility Fee, Real Estate Excise Tax (REET) funds. Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning).
5. **Timeline** = Long-term
6. **Benefit** = Planning Area and Facility Specific
7. **Life of Measure** = Life of structure
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe continues to model projects utilizing Low-Impact Development Standards when possible. The North East Housing Project is a prime example of the dedication and commitment to low-impact development. Other examples of this include the porous concrete that was used for the Wild Wolves Youth Center in the parking lot. Using this type of material has reduced the rain water runoff and puddling of water is nonexistence where this material was used. The rain garden roof design was incorporated into the development of the Elders Building and the new casino under current construction has gone through Low-Impact Development modeling in the planning stages of the design work. In addition, storm filters were installed in all parking lots with surface water runoff and the filters are check annually.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: FL-PE- 1

Public Education: Flood

The Tribe will work with the County Water Programs to expand its public education relating to floods. The purpose is to increase the ability of residents to react appropriately during a flood event and reduce the potential for injuries and/or loss of life and property damage impacts of a flood event through education and outreach. The current program employs a variety of means including:

- Direct mail to flood hazard area residents with information on how to respond to floods and the availability of insurance.
 - Offer and advertise technical assistance to farmers and business owners on how to reduce property and livestock losses during floods and on how to prevent hazardous substance spills.
 - Develop and implement a general advertising campaign addressing the potential dangers of flood events and their avoidance, as well as explaining how floodplains and floodways function.
1. **Goal(s) Addressed** = Increase Public Preparedness; Preserve or Restore Natural Resources; Promote A Sustainable Economy
 2. **Cost of Measure** = Varies
 3. **Funding Source and Situation** = County's Surface Water Management Utility Fee, Real Estate Excise Tax (REET) funds. Funding could be obtained through local budget or grants.
 4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning; Administration) Pierce County Water Programs.
 5. **Timeline** = Ongoing
 6. **Benefit** = Planning Area.
 7. **Life of Measure** = Varies
 8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓	✓	
Comments			
The Public Safety Department increases Tribal Membership and employees numerous ways throughout the year. The annual Benefits Fair is held in August and is a full event lasting most of the day, allowing employees to come in when schedules allow. Numerous brochures are available for preparedness for a variety of hazards including flooding and preparations to take to mitigate against it. Pierce County Emergency Management works with PC Surface Water Management to provide the public with consistent messaging to reduce flood effects. An annual newsletter called 'Monthly Tips' is put out by the PC PubEd Department and made available to all EMC members for distribution amongst their departments. This newsletter occasionally makes the Tribal newspaper for a broader distribution. This past year the All Hazard Mitigation Plan was available at the Benefits Fair for public comment and maps were displayed of the floodplain where folks			

could easily identify if they were living in a floodplain area and gather information on preparedness for it. Future work in this area includes advertising technical assistance to farmers and business owners on how to reduce property and livestock losses during floods and how to prevent hazardous substance spills contaminating water sources.

Origin

Previous Plan	Current Plan
✓	✓

Volcanic Hazard Mitigation Measures

Priority: V-HMF- 1

Lahar Warning Siren

The Tribe will continue to work with PC DEM in establishing lahar warning sirens throughout the valley. Currently there are several ‘dead spots’ where the sirens cannot be heard, including areas near the Port. However, these sirens would ideally be all hazard sirens, as noted in the multi-hazard section above.

Currently the Tribe is working with PC DEM to procure a siren for placement on the Chief Leschi School property.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation
2. **Cost of Measure** = Approx. \$40,000/siren
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Public Safety; Administration; Chief Leschi School; Planning); PC DEM; Port of Tacoma; WA EMD.
5. **Timeline** = Short-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
This information is the same as was noted in the update for the Warning Systems mitigation measure under the multi-hazards.			
Over the past few years the Port of Tacoma has purchased seven sirens through grants. Five of these sirens are stationary and two are portable. The City of Fife has purchased outdoor warning sirens and replaced old ones. Two additional sirens are located by the I-5 EQC and Chief Leschi School. Constant good communication between Chief Leschi School and PC DEM regarding the siren sounding during monthly tests of the system. Chief Leschi School will report immediately to PC DEM if the monthly siren test is not heard, allowing for immediate mitigation of the system. In addition, the AM 1580 radio station was expanded and covers the Fife area to broadcast emergency evacuation information. This was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to “completed” with on-going maintenance to reflect this mitigation measure has been full filled.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: V-HMF- 2

Dam Drawdown Agreements

Hazards: V, DF

The Tribe will work with the County to develop an agreement with the various facility owners to lower the reservoir levels in the Nisqually if there is a threat of volcanic activity on Mt. Rainier. Drawing down the dams (possibilities include the Alder, La Grande, Mud Mountain Dams) could impede the progress of a major flow or perhaps totally contain the flow if it is of sufficiently small size. A spontaneous lahar would not allow time for a significant lowering of the water levels so its primary utility would be when the threat were due to an increase in volcanic activity.

Special consideration must be given to how this measure may impact salmon habitat.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = Minor
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Natural Resources; Fisheries; Administration); PC DEM; Facility Owners.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Tribe has not initiated the conversations yet to develop an agreement with the various facility owners to lower water levels in the Nisqually if there is a threat of volcanic activity. The Tribe has two large pieces of land “In Fee” bordering Lake Kapowsin and if the worst case scenario were to occur it would not affect this property according to the current mapping scenarios. This would not be the situation if Mud Mountain Dam were to receive lahar flows. Many tribal members and businesses would be greatly affected downstream along the Puyallup River if this were to occur. USACE owns Mud Mountain Dam and its primary purpose is to protect the Port of Tacoma. Currently USACE is working with King County and Pierce County to coordinate alert warning messaging to residents and businesses along the White River when USACE releases water. During the past couple of years as the dam released water during heavy rainfall, this has caused numerous flooding impacts in Pacific area along Butte Rd. Due to the increased sediment flow and buildup of sand bars the free board has been greatly reduced and increased the probability of overtopping the levee with significant rain events. If a lahar were to flow though this area it would have catastrophic cascading consequences. (August 24, 2016)			

Origin

Previous Plan	Current Plan
✓	✓

Priority: V-HMF- 3

Lahar Flow Control

The Tribe will work with the County in a Lahar Flow Control Research Program that will identify a comprehensive list of sabô projects which could be implemented over time to reduce the volume of Puyallup and Carbon river valley lahars.

Erosion control structures (such as Sabô Works) can inhibit the flow as it descends the valleys limiting the damage further down the valley. These include crib dams, channel works, step dams, slit dams, catchment basins, training dikes, etc. In most instances, rather than a single structure they are used in multiples or combinations of many different structures.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = HMGP, PDM, Army Corps, etc. Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration); PC DEM.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Life of Structure
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>The Tribe has not yet began to work with the County in a Lahar Flow Control Research Program (there is currently no such program in existence). A project of this magnitude will require extensive research on the County's side, bringing in many subject matter experts and identifying a funding source to support such efforts. There will be controversial opposition to the construction of additional dams along the rivers. The current probability of this mitigation measure being completed is very slim to none. There are many other identified mitigation measures within this section of the plan that will have measureable benefits for the Tribe and time must be directed at full filling them a head of this one.</p> <p>The Puyallup Tribe is involved in a regional effort to develop a Mt. Rainier Plan that encompasses many local, tribal and regional partners. This project will take few years to complete coordinating many complex aspects of preparedness, mitigation, response and recovery into a single plan.</p>			

Currently the City of Orting is working on developing a hazard/incident planning guide as part of the Mt Rainier Plan and is mapping locations of evacuation assembly areas, control points for evacuation routes, pre-staged cones and signage amongst other things. The working group is beginning with the City of Orting and will coordinate response and preparedness planning efforts throughout the valley below. The Puyallup Tribe will continue to coordinate efforts with the working group on development of this plan. Many Tribal members live outside the Puyallup Reservation and ensuring their safety if Mt Rainier should send another lahar flow throughout the valley is a must.

Origin

Previous Plan	Current Plan
✓	✓

Priority: V-EMC- 1

Evacuation Planning

Hazard: V, DF

The Tribe will develop evacuation plans for each of its facilities in the lahar inundation zone. These plans will be posted in a prominent place within each facility. For residents, the Tribe will provide information so that the residents may develop their own evacuation plans.

Part of this effort will be to conduct regular evacuation drills in conjunction with siren tests when these plans can be tested.

1. **Goal(s) Addressed** = Protect Life and Property; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Planning; Public Safety; Administration); PC DEM.
5. **Timeline** = Short-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Tribe has developed evacuation plans for the Administration Building, Chief Leschi School, Health Clinic, Elders Building, Grandview Early Learning Center, the Youth Center and other department building. These evacuation plans and maps are posted in a prominent place within each facility. Practice drills occur with Chief Leschi School, Grandview Early Learning Center and the Youth Center on a regular basis. Currently the Youth Center is planning for a large scale flood or lahar evacuation exercise which will			

include transporting children and staff to their alternate site at the NE Housing. Practice drills can occur simultaneously with the monthly lahar warning sirens that sound off in the valley if Departments want to exercise on it.

Tribal members had the opportunity to view hazards maps for flooding, possible liquefaction and lahar recently at the Community Outreach Benefits Fair, August 23, 2016. Preparedness information was available in numerous formats and a Pierce County Opt-In notification brochure. The Pierce County Opt-In program allows individuals to customize the way they receive alert notices (cell phone, email, land lines, text messaging etc.) and for what types of alerts they want to be notified on, such as hazardous events, traffic, weather, law enforcement activities etc. Many tribal members live off the reservation and the alert system can give them additional information along with NOAA All Weather radios for a lahar event. (August 24, 2016))

Origin

Previous Plan	Current Plan
✓	✓

Priority: V-PE- 1

Public Education: Volcanic

The Tribe will work with the County in implementing public education programs for Tribal members directly threatened by lahars. The following education and awareness options for the inundation areas will be pursued to varying degrees in each of the valleys.

- Vulnerability information
- Evacuation planning
- Siren information
- Radio warning information
- NOAA All-Hazards Radio training
- Teacher training on hazards

These efforts will incorporate an Education for Self-Warning and Evacuation (ESWEV) program into public education efforts. ESWEV is advice to residents in flow pathways to seek high ground upon sensing any seismic shock or rumbling noise from upstream. Numerous case histories show that fatalities can be reduced if, in effect, people are their own Acoustic Flow Monitors.¹

The Tribe will also work with the County to expand on its ashfall preparedness and education module stressing individual preparedness for tephra events. The result is to limit structural damage to buildings, limit damage to vehicle engines and building air intake systems, and decrease respiratory problems in the general population from ash inhalation (i.e., distribute masks).

1. **Goal(s) Addressed** = Increase Public Preparedness.
2. **Cost of Measure** = Varies
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety); PC DEM.
5. **Timeline** = Ongoing
6. **Benefit** = Planning Area).
7. **Life of Measure** = Varies
8. **Community Reaction** = The proposal would benefit those affected, with no adverse reaction from others.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>The Tribe still works on this through a variety of public outreach programs. This is promoted through safety fairs, newsletters, and presentations to a wide audience. May is Volcano Awareness month in Washington State and PC DEM's Public Education Department promotes an outreach program bringing the awareness of the volcanic hazards and what communities at risk can do to reduce the potential impacts.</p> <p>The monthly siren test sounds the first Monday of each month at Chief Leschi School, the EQC and throughout the river valleys where the sirens have been placed in areas affected by potential lahar debris flows. Students, businesses and residents have grown accustomed to hearing the monthly sounding sirens and reports come in rapidly if they are not heard. A PC Warn notification system is sent out monthly for the siren testing as a reminder.</p> <p>Just recently Tribal members and employees were able to view hazards maps at the Annual Benefits Fair and see where the potential lahar would flow in a Case I, II, and III events. Information is available for preparedness. Using the approach of preparations for all hazards enables Tribal members to be prepared for any type of hazard that may occur at any given time. The Tribe stresses to be prepared at home, the workplace and in their cars.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Severe Storms Mitigation Measures

Priority: SS-EMC- 1

Tree Maintenance Program

Hazard: SS, EE

The Tribe will participate in existing programs to trim tree branches and cut down trees which might threaten the safety of either the citizens or the public infrastructure. Currently Pierce County, Master Gardeners, and the Pierce County Cooperative Extension run a program to assist the public with preventing storm damage through the proper use of vegetation and trimming of dangerous limbs. This program could be developed in unison with similar information on fire mitigation through creation of “defensible space”.

1. **Goal(s) Addressed** = Protect Life and Property; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Maintenance); PC Community Services (Coop. Ext.).
5. **Timeline** = Long-Term
6. **Benefit** = Planning Area
7. **Life of Measure** = TBD
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
The Tribe currently has a program called “ <i>Call to Haul, Clean the Res</i> ” and they will come and haul debris. In addition the Tribe maintains a program on a routine bases for the Elders to maintain trees and landscaping needs. The Emergency Home Repair Program for the Tribe will also come out and cut down at risk trees following storm events. These are ongoing continuing programs the Tribes provides for its membership.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: SS-PE- 1

Public Education: Severe Storms

Hazard: SS, EE

The Tribe will work with the County to institute education programs relating to winter preparedness as part of their preparedness education program. These programs will be expanded to include information on such topics as protecting a home from damage from falling branches, generator use, and in some cases will target those areas identified as having the greatest potential wind loading. This will be incorporated into the PCNET program.

1. **Goal(s) Addressed** = Increase Public Preparedness.
2. **Cost of Measure** = Varies
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration); PC DEM.
5. **Timeline** = Short Term
6. **Benefit** = Planning Area
7. **Life of Measure** = Varies
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
✓	✓		
Comments			
Winter preparedness is incorporated into the preparedness educational programs and is an ongoing outreach campaign. Pierce County uses an all hazards approach to their outreach preparedness programs with the Tribe. Additionally monthly Public Safety Meetings incorporate preparedness information that is made available to all Tribal Departments. Pierce County DEM holds an annual winter preparedness “Storm Ready” outreach seminar to all jurisdictions. NOAA Weather, PSE, Fire Departments and other large local utility company’s present information on the upcoming fall/winter season and preparedness mitigation measures to reduce possible loss of life and property damage. This was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to <i>on-going</i> to reflect the continued need for maintaining this mitigation measure.			

Origin

Previous Plan	Current Plan
✓	✓

Landslide Mitigation Measures

Priority: L-HMF- 1

Risk Assessment: Landslide Occurrence Map

The Tribe will assist in the development of a detailed landslide occurrence map similar to Seattle's Landslide Atlas. This requires detailed geological assessments.

1. **Goal(s) Addressed** = N/A. Goals addressed are contingent upon the area-specific mitigation measures resulting from this priority.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = State or Federal initiated project.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (GIS); PC DEM; PC GIS; WA DOE; WA DNR; USGS.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
Department of Natural Resources is beginning to work on this and put together a working group within Pierce County to update the landslide areas. Due to prohibitive costs in development, identifying the end user potential use of the information will dictate the areas that will be mapped within county boundaries. Currently there is no Pierce County GIS layer that is consistent throughout the county. There is coastal landslide information and urban landslide information but there is not a GIS layer that crosses Tribal trust lands, local municipalities with the county boundaries. There is an old historical GIS layer that is based on slope percent that was used in this mitigation plan to show potential risk based on slope percent only. Many other factors influence landslide risk primarily being soil type and saturation levels of the soils.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: L-PE- 1

Public Education: Landslide

The Tribe will promote public education relating to the landslide hazard to all tribal residents in the designated landslide hazard areas.

1. **Goal(s) Addressed** = Increase Public Preparedness; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration); PC DEM.
5. **Timeline** = Short-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>Landslide preparedness is incorporated into the preparedness educational programs and is an ongoing outreach campaign. Pierce County uses an all hazards approach to their outreach preparedness programs with the Tribe. Additionally monthly Public Safety Meetings incorporate preparedness information that is made available to all Tribal Departments.</p> <p>This was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to <i>on-going</i> to reflect the continued need for maintaining this Public Outreach mitigation measure.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Tsunami Mitigation Measures

Priority: TS-HMF- 1

Tsunami Inundation Zone Maps

The Tribe will encourage the development of tsunami inundation zone maps along the lines of those currently developed for the Washington and Oregon coasts. Application of these maps will lead to coastal area land use controls that more accurately reflect vulnerability.

1. **Goal(s) Addressed** = N/A. Goals addressed are contingent upon the area-specific mitigation measures resulting from this priority.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = State or Federal initiated project
4. **Lead Jurisdiction(s)** = Puyallup Tribe (GIS); PC DEM; WA EMD; USGS; WA DOE.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
<p>In January 2007, publication NOAA Technical Memorandum OAR PMEL-132, Tacoma, Washington, Tsunami Hazard Mapping Project: Modeling Tsunami Inundation from Tacoma and Seattle Fault Earthquakes was published. This 27-page research report is available through the internet and is the result of modeled tsunami inundation for at risk coastal communities of the greater Tacoma area. Three tsunamigenic magnitude 7.3 earthquake scenarios were modeled; the Seattle Fault, and the two Tacoma faults that were based on the most recent geophysical evidence available. The modeled results were provided to the State of Washington for use in tsunami hazard mapping and to assist in the development of evacuation plans for those areas deemed at risk. The research report details the tsunami model, discusses the modeling results for all three fault scenarios and summarizes the results. The Seattle Fault would generate more inundation over the two Tacoma Faults and poses a greater threat for the Puyallup Tribe although all three scenarios cause inundation along the Port of Tacoma and the Puyallup River affecting the Tribe. Tsunami maps were produced from this data and are included in the Risk Assessment Section of the Mitigation Plan.</p> <p>This was changed in Table 5-1 Mitigation Strategy Matrix from 4-6 years under the Timeline column to “<i>completed</i>” to reflect this mitigation measure has been completed. As information in the future becomes available the Tribe will incorporate new Tsunami Inundation mapping into their risk assessments.</p>			

Origin

Previous Plan	Current Plan
✓	✓

Priority: TS-HMF- 2

Tsunami Warning Siren

The Tribe will work with the County to develop a tsunami warning system, especially for the vulnerable Port areas. Any system could tie into the existing lahar warning system and its present infrastructure.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety); PC DEM; WA EMD; USGS; WA DOE.
5. **Timeline** = Long-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The sirens used for a lahar warning in the Port of Tacoma area would also be sounded in the event of a tsunami. There are sirens in the Port of Tacoma and by the I-5 EQC. These are tested monthly with a notification prior to the sounding of the sirens. The public has grown accustomed to these monthly testing's. In addition to this, Pierce County has the ability to alert the population with a program called PC Alert. Crafted templated warning messages are embedded into the program and can be sent out at a moment's notice 24/7. The citizens will receive these messages through their landline phones if a reverse 911 message was sent out, or through the PC Alert opt-in program (that citizens have previously signed up for) on a variety of devices that they designated.			

Origin

Previous Plan	Current Plan
✓	✓

Priority: TS-PE- 1

Public Education: Tsunami

The Tribe will promote tsunami-specific public education for those populations (work and residential) in the tsunami hazard areas. Education will consist of hazard awareness and plans to move to high ground following earthquakes to escape the secondary tsunami hazard.

1. **Goal(s) Addressed** = Increase Public Preparedness; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Administration; Public Safety); PC DEM; WA EMD; USGS; WA DOE.
5. **Timeline** = Short-term
6. **Benefit** = Planning Area
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal is likely to be endorsed by the entire community.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
An all hazards approach is used with the outreach preparedness program but emphasis on tsunami specific training still needs to occur with vertical evacuation or high ground escape routes especially within the Port of Tacoma areas. With the update of infrastructure within the Port of Tacoma, this will provide a great opportunity for site specific hazard awareness training during the next few years. This was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to “on-going” to reflect the continued need for Public Education on this mitigation measure.			

Origin

Previous Plan	Current Plan
✓	✓

Drought Mitigation Measures

Priority: D-EMC- 1

Drought Monitoring Program

The Tribe will continue to work with the WA DOE, NRCS, and the Pacific Northwest Tribal Climate Change Network, EPA Work Group on Climate Change Adaptation Planning and other Tribes to implement its drought monitoring program. The Tribe will continue to promote its salmon recovery and habitat protection interests and ensure that the monitoring program adequately addresses those interests. An example of existing groups that could help foster the development of this program would be the Northwest Indians Fisheries Commission and the Salmon Stewards of Western Washington.

In addition, we will continue to develop methods for protection of our hatchery and acclimation facility water supplies from high temperature impacts through well water and ground water augmentation strategies.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Emergency Services; Increase Public Preparedness; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants. The Program is funded mostly by WA DOE.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Fisheries; Natural Resources); WA DOE, NOAA.
5. **Timeline** = Ongoing
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
The Puyallup Tribe has completed a draft of its Climate Change Impact Assessment and Adaptation Options Report (see Climate Change Tab 1 in the Risk Assessment Section) and will be looking to finalize this in the coming months.			

Origin

Previous Plan	Current Plan
✓	✓

Public Education: Drought

The Tribe will work with partners at WA DOE to develop a drought education program. The program will address specifically the risk posed to natural resources during drought conditions and actions that individual homeowners and businesses can take to mitigate the effects of drought on these interests.

1. **Goal(s) Addressed** = Increase Public Preparedness; Preserve or Restore Natural Resources; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = Puyallup Tribe (Fisheries; Natural Resources); PC Water Programs; WA DOE.
5. **Timeline** = Short-term
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = The proposal would be somewhat controversial.

Status Update: 2012 – 2017 Edition

Complete	Ongoing	Partially Complete	Deferred
	✓		
Comments			
Although drought has not negatively affected the Tribe in recent years with the El Nino weather pattern in 2015 Pierce County received significant less annual perception/snowpack experiencing a record drought.			
In 2015 Tacoma Water announced it had initiated Stage 2 of its Water Shortage Response Plan. Pierce County was urging residents to consider cutting back on water use at work and home during the drought, check for water leaks and share information about the drought with family and friends to reduce their water use too. Public flyers were available for residence to educate on what they could do to conserve water (see following page).			
The timeline was changed in Table 5-1 Mitigation Strategy Matrix from 1-3 years under the Timeline column to <i>on-going</i> to reflect the continued need for Public Education in maintaining this mitigation measure not only during drought conditions but as a best practice every day to reduce water waste and preserve our natural resources.			

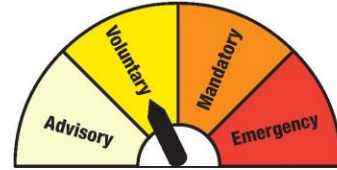
Origin

Previous Plan	Current Plan
✓	✓

VOLUNTARY STAGE TOP TIPS



STAGES OF WATER SHORTAGE CONTINGENCY PLAN



Seattle, Everett and Tacoma are asking customers to voluntarily reduce water use by 10 percent. We are working together to help manage water supplies for people and fish during this unprecedented hot and dry weather and higher-than-normal water use. Here are some great tips to help you achieve that 10% reduction. For more information visit www.savingwater.org.

Please consider doing the following:

Outdoors Tips



- Let your lawn go dormant and limit plant watering to twice a week.
- Water plants before 8am (best) or after 7pm.
- Wash your vehicle(s) at locations that recycle the water.
- Do only essential pressure washing.
- Minimize refilling swimming pools and hot tubs.
- Turn off water features.
- Fall is the best time for planting.

More Outdoor Tips click below
www.savingwater.org/LawnGarden/index.htm



Limit plant watering to twice a week.



Water plants before 8am (best) or after 7pm.

Indoors Residential Tips



- Reduce your showering time.
- Check for and fix leaks.
- Wash only full loads of laundry and dishes.
- Turn off the tap while brushing your teeth or shaving.
- Don't pre-rinse dishes.
- If purchasing fixtures/equipment, choose water-efficient models.

More Indoor Residential Tips click below
www.savingwater.org/Indoors/index.htm



Reduce your showering time.



Wash only full loads of laundry and dishes.

Indoors Businesses Tips



- Encourage reduced showering times at your facilities.
- Serve water only on request.
- Check for and fix leaks.
- Wash only full loads of laundry and dishes.
- Provide new towels only on request.
- Check cooling towers for overflow and excessive blowdown.
- If purchasing fixtures/equipment, choose water-efficient models.

More Indoor Business Tips click below
www.savingwater.org/Businesses/index.htm



Serve water only on request.

8/10/15

Endnotes

¹ Catastrophic Debris Flows Transformed from Landslides in Volcanic Terrains: Etc., U.S. Geological Survey, Professional Paper 1630, 2001.

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