

SECTION IV
MITIGATION ACTIONS



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Mitigation Strategy

This section provides the blueprint for the Tulalip Tribes to reduce potential losses from the natural hazards identified in the Risk Assessment in Part III.

Goals and Objectives

This section defines the general outcomes that can be expected as a result of successful implementation of this plan. Plan goals are broad statements describing the principles that guide the actions suggested in this document. Plan objectives are more targeted statements that define strategies and implementation steps to attain the goals. The plan goals and objectives below were developed during the previous planning process and updated by the 2010 Mitigation Planning Team.

2010 Goals and Objectives

1. Protect people, property and the natural environment
 - a. Purchase hazard-prone areas for conservation and risk reduction
 - b. Buy-out or relocate structures located in high-risk hazard areas
 - c. Encourage low impact development through land-use regulations
 - d. Consider hazard vulnerability when siting and planning new critical facilities
2. Ensure continuity of critical economic and public facilities and infrastructure
 - a. Support redundancy of critical government functions
 - b. Retrofit or build to highest standards, critical facilities and infrastructure
 - c. Support emergency access and redundant evacuation routes
3. Promote resiliency to protect Tribal sovereignty and identity
 - a. Increase mitigation and emergency management capabilities for the Tulalip Tribes and Quil Ceda Village
 - b. Enable the Tulalip Tribes to be self-sufficient for at least 7 days after a disaster
4. Increase public awareness of natural hazards and involvement in hazards planning
 - a. Encourage organizations, businesses, and local governmental agencies within community and region to develop partnerships
 - b. Implement hazard awareness, preparedness and reduction programs



Mitigation Actions and Activities

This section details the mitigation actions and activities that have been chosen by the Mitigation Planning Team to address the issues discovered during the Risk Analysis. They have been prioritized by the type of hazards they address, effectiveness, cost and likelihood of implementation.

Many of the action items from 2004 and 2006 were designed to be ongoing and are included as action items for 2010. Other short-term and long-term action items have had little to no progress; however, the Mitigation Planning Team agreed that they remain worthwhile and should also be included in the updated plan. The MPT has altered and re-prioritized the activities based on new information, changes in public concern over hazards, recent events, political willpower and funding opportunities. In addition, barriers to many of the action items have been identified and solutions to overcoming these barriers are included in the explanation of each action item.

Action items were prioritized based on the input of the Mitigation Planning Team, each of whom were given 6 stickers with which to rank the action items they felt were of greatest importance. Each item received between 5 and 1 votes and was grouped accordingly from highest to lowest. Within each grouping, items with smaller funding requirements, greater impact, fewer political barriers or shorter timeframes to completion were ranked higher.

The action items were previously labeled as M-2 through M-11 to denote those identified in 2004, and T-1 through T-10 for 2006 items. As of this update they are relabeled to reflect their reprioritization. Action item M-1, hire a full-time Emergency Management Coordinator, was completed. **Table 13** identifies the old and new labels.

Section IV: Mitigation Actions

New ID	Old ID	Description
1	M-6	Assure that the public is informed of the necessity of maintaining a 7-day supply of food and water, along with basic first aid and medical supplies.
2	M-2	Create a community wide comprehensive education program to educate the public, private and business sectors about hazards and hazard mitigation.
3	M-5	Identify critical community facilities and infrastructure that are without back up power generators.
4	T-1	Develop a local Hazard Mitigation Plan for Quil Ceda Village
5	M-9	Institute low impact development regulations for new developments as well as re-development projects.
6	T-9	Implement higher regulatory standards for hazard prone and environmentally sensitive areas using best available science
7	T-4	Buy-out of landslide, flood and tsunami prone properties at Priest Point, and other coastal locations
8	T-7	Have Tulalip become a TsunamiReady community
9	M-11	Utilize Geographic Information Systems (GIS) in decision-making processes.
10	M-10	Assess the Tulalip Tribes evacuation and primary response routes.
11	M-3	Create and maintain partnerships with all entities that impact the Tulalip Tribes to ensure that critical facilities and infrastructure are retrofitted or built to standards that make them less vulnerable in a hazard event.
12	M-7	Improve\expand storm water drainage, dams, detention and retention system capabilities.
13	T-8	Have Tulalip become a Firewise community
14	T-6	Have Tulalip become a StormReady community
15	T-2	Assessments and mapping of critical facilities and infrastructure
16	M-8	Promote use of new technology in hazard mitigation and emergency preparedness
17	T-3	Seismically retrofit and install back-up generators for the Tribal Center, Kenny Moses Building and the Quil Ceda Casino
18	T-5	Relocate homes located on the bluff at Hermosa Point
19	M-4	Create and maintain partnerships with all entities that impact the Tulalip Tribes to implement non-structural retrofitting in Tribal households, facilities and businesses.
20	T-10	Join the National Flood Insurance Program (NFIP)
n/a	M-1	Create a full time position in the Tulalip Tribes for an Emergency Management Coordinator. Completed.

Table 13: Mitigation Action Items with New and Old Prioritization



1: Assure that the public is informed of the necessity of maintaining a 7-day supply of food and water, along with basic first aid and medical supplies.

Problem/Opportunity

During and after a hazard event, emergency responders may be either overwhelmed with emergency calls or unable to access some residents. It is important that individual households are prepared for a period of self-sufficiency while responders deal with more immediate and life-threatening situations. Assuring that the public is informed of the necessity of maintaining a 7-day supply is a preparedness measure that must be implemented until mitigation measures can be implemented that appropriately address the issue of isolation.

Status

Ongoing. More than half (54%) of the public survey respondents stated that they already had a 3-day supply of food and water, while 50% stated they kept a first-aid kit and extra medicine. Based on previous events, FEMA is changing its recommendations and stating that a three day supply may be insufficient. The Mitigation Planning Team agreed the new goal will be a 7-day supply.

Implementation Strategy

Educate the public about the necessity of maintaining a 7-day supply for emergencies. Work with local businesses, such as Wal-Mart and grocers, to provide information about how to stock a supply kit, and offer discounts, coupons or other buying programs to assist low-income residents. The Emergency Management Coordinator could implement this strategy.

Lead Agency

Tulalip OEM

Funding Options

Tulalip Operating Budget, Emergency Management Performance Grant (EMPG)

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	All	1, 2, 3, 4

2: Create a community wide comprehensive education program to educate the public, private and business sectors about hazards and hazard mitigation.

Problem/Opportunity

The general public is often unaware of the risk of hazards and what actions to take during a disaster event. During and after a hazard event, emergency responders may be either overwhelmed with emergency calls or unable to access some residents. It is important that individual households and local businesses are prepared for an event and have the ability to support themselves for a period of time while emergency responders deal with more immediate and life-threatening situations.

Status

Ongoing. This activity is one of the main duties of the Emergency Management Coordinator.

Implementation Strategy

The education program should be an ongoing program that is devoted to increasing the public’s awareness of what hazards affect Tulalip and what can be done to mitigate these hazards and their effects. Following a disaster event, there should be extra efforts to provide the public with information about disaster preparedness and mitigation measures. The Emergency Management Coordinator could implement this strategy.

Lead Agency

Tulalip OEM

Funding Options

Tulalip Operating Budget, Emergency Management Performance Grant (EMPG), Hazards Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program

Cost	Timeline	Hazards	Goals
\$50,000, +\$20,000/annum	Ongoing	All	1, 2, 3, 4



3: Identify critical community facilities and infrastructure that are without back up power generators.

Problem/Opportunity

Hazard events frequently cause power outages and create disruptions to the operation of important community facilities. In past cases, the Tulalip Tribe's operations have been disrupted or unable to function as necessary. It is especially important that facilities designated as emergency shelters have back up power generators. Back up power generators supply the needed resources to maintain operations until the power supply is restored.

Status

Ongoing. The GIS department has begun gathering this information and adding it to the Critical Buildings layer.

Implementation Strategy

The Emergency Management Coordinator could implement this strategy.

- Identify critical Tulalip Tribes facilities that currently do not have back up power capacity.
- Prioritize the list of critical Tulalip Tribes facilities that do not have back up power capacity by which facilities are most important in maintaining the critical functions of Tulalip.
- Acquire a source of back up power sufficient to maintain necessary operations for these Tulalip Tribes facilities using the prioritization list.
- Provide information on the importance of a back up power source.
- Work with utility providers as a possible funding source.

Lead Agency

Tulalip Utilities Department, GIS

Funding Options

Tulalip Operating Budget, PDM grants

Cost	Timeline	Hazards	Goals
Staff time, Cost of generators	Ongoing	All	2

4: Develop a local Hazard Mitigation Plan for Quil Ceda Village

Problem/Opportunity

Quil Ceda Village is a corporate municipality within the Tulalip Reservation. It is also the heart of the Tulalip’s economy and part of the basic economy of the region, employing residents from surrounding communities and financing Tribal and county programs and initiatives. In the event of disaster, losing these businesses, even for a few hours or days, would cause an economic domino effect that would ultimately affect the Tulalip’s well-being and safety as well as the region’s. Continuity of the area’s basic economy is essential to the Tribe’s ability to respond and recover from a hazard event, natural or otherwise. Thus it is imperative that the Quil Ceda Village develop a hazard mitigation plan so to minimize potential losses to and disruptions of the local economy, and to protect the well-being of those who work, live and patronize the Village.

Implementation Strategy

A PDM planning grant will be prepared in order to hire a consultant/staff person to prepare the plan. The Tulalip Tribes will supply staff time for meetings, coordination and administration of the grant and planning process as part of its cost share.

Status

Not implemented at this time. Quil Ceda Village does not have an Emergency Coordinator; the Environmental Health and Safety Coordinator was unable to attend planning meetings. The Emergency Coordinator will continue to work with the Quil Ceda Representatives to secure a planning grant for a private consultant to complete the plan, and support the process.

Lead Agency

The Tulalip Office of Emergency Management will be the lead agency in preparing the grant. The Tulalip OEM and the Quil Ceda OEM will share the lead in developing the plan.

Funding Options

Pre-Disaster Mitigation Program planning grant funds will be used to hire a consultant with expertise in Tribal mitigation plan. The Tribe’s cost share will come from the Tulalip Operating Budget.

Cost	Timeline	Hazards	Goals
\$46,000	Short-Term	All	1, 2, 3, 4



5: Institute low impact development regulations for new developments as well as re-development projects.

Problem/Opportunity

Impervious surfaces, such as sidewalks, driveways, or foundations, do not allow water to filter through the ground but instead drain it quickly into storm water conveyance systems. This situation increases the risk of flooding and adds sediment and toxins to runoff. Low impact development has the potential to alleviate these adverse impacts through the creation of appropriately placed green space, landscaping, grading, streetscapes, roads and parking lots. Low impact development can achieve multi-functional objectives and help to reduce storm water impacts and provide and maintain the beneficial hydrologic functions of a natural drainage system.

Status

This project has been partially implemented by Community Development. The new housing project in the Quil Ceda Creek area, currently in the planning stage, has been approved by the EPA for a matching funds grant to be a Low-Impact Development (LID) project. It is located on low-lying land on hydric soils and is also in the tsunami hazard zone; while it is not ideal to install a large housing development in a hazard zone, LID construction will help offset any related stormwater disposal or flood risk issues.

Implementation Strategy

Develop Tribal regulations and guidelines that implement low impact development objectives to:

- Minimize impacts to the extent practicable by reducing imperviousness, conserving natural resources and ecosystems, maintaining natural drainage courses, reducing the use of pipes and minimizing clearing/grading.
- Recreate detention and retention storage so that water is dispersed and evenly distributed throughout a site. This can be done with the use of open swales, gentler slopes, depressions, storage rain gardens (bio-retention), water use (rain barrels) and others.
- Strategically route water flows to maintain pre-development drainage times.
- Provide effective public education and socioeconomic incentives to ensure property owners use effective pollution prevention measures and maintain water management measures.

Lead Agency

Tulalip Community Development

Funding Options

Tulalip Operating Budget, Tulalip Capital Improvement Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	Flooding, Severe Weather	1, 2, 3, 4

6: Implement higher regulatory standards for hazard prone and environmentally sensitive areas using best available science

Problem/Opportunity

Due to complicated and contradictory jurisdictional issues, the area of the Tulalip Reservation has lacked adequate regulations in order to prevent development in hazard-prone areas and protect environmentally and culturally sensitive areas. Thus as a mitigation action, it is necessary that the Tulalip Tribes implement higher regulatory standards in order to protect sensitive habit and protect life and property.

Status

The Draft Comprehensive Land Use Plan rates Land Development Suitability by down-rating properties in landslide areas, within 100 feet of high-value wetlands, 50 feet of moderate-value wetlands and Class 2 streams, and within 200 feet of Class-1 streams and critical-value wetlands. In addition, it discourages development in areas with slopes above 15%, aquifer recharge areas, timberlands, critical habitat and wildlife areas. It encourages development near roadways, existing developed areas and those with sewer and water capacity.

Implementation Strategy

Tulalip Community Development will work with Tulalip and Quil Ceda OEMs in order to develop higher regulatory standards that can be offered for approval by the Tulalip Planning Commission.

Lead Agency

Tulalip Community Development

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	All	1, 2, 3, 4



7: Buyout of landslide, flood and tsunami prone properties at Priest Point, and other coastal locations

Problem/Opportunity

The topography of Tulalip creates an extremely dangerous situation for many residents living along the coast. Unregulated development has led to many small communities being created along the small edge of land between Possession Sound and the steep landslide-prone bluffs that may reach up to 300 feet in height. In order to protect from landslides or the onslaught of waves generated by severe storms, many residents have taken it upon themselves to protect their property by building bulkheads or shoring up steep slopes.

Nonetheless these measures typically are only short term in effect and can disastrously affect the natural ecosystem, especially salmon habitat. Destruction of salmon habitat can mean the loss of livelihood and cultural identity for the Tulalip Tribes, many of whose members rely on fishing as a way of life.

Buy-out of hazard-prone properties along the Tulalip coast is the prime long-term focus of Tulalip hazard mitigation efforts. Not only will buy-out eliminate the potential loss of life and property, as well as the need for federal and local recovery aid, but it will also help protect and restore the natural environment.

Status

Stalled; a ranking system to prioritize properties with the highest Cost Benefit Ratio must be developed to appropriately channel the energies and funds of the Tribe. Housing, Leasing, Natural Resources and Emergency Management will work together to help determine the best properties to purchase.

Some properties are approaching the end of their long-term leases and will return to Tribal ownership in the next few years. These properties will be mapped to determine which should be relegated to conservation purposes, rather than re-inhabited or developed.

Implementation Strategy

Close collaboration amongst the Tulalip agencies and local homeowners will identify which properties to prioritize for buy-out. The Tulalip OEM will prepare project grants, if applicable, each year in order to purchase property.

Lead Agency

Tulalip OEM, Tulalip Natural Resources, Tulalip Community Development

Funding Options

FEMA PDM grant funding is expected to provide much of the financing.

Cost	Timeline	Hazards	Goals
\$2,000,000+	Ongoing	Landslides, Tsunamis, Severe Weather, Flooding, Earthquakes	1, 4

8: Have Tulalip become a TsunamiReady community

Problem/Opportunity

NOAA's TsunamiReady program is part of its StormReady program and is a great opportunity to make Tulalip safer and more prepared from the effects of tsunamis, which although extremely rare, can have disastrous effects. TsunamiReady communities are better prepared to save lives from the onslaught of tsunamis through better planning, education, and awareness.

One section of the program includes devising an evacuation plan, identifying evacuation routes and installing signs to alert the public, and creating warning systems. Given the short amount of warning time before a tsunami strikes the Tulalip area, depending on the source, beach sirens were suggested multiple times during the planning process both by MPT members and the public. Practice drills to determine carrying capacity of evacuation routes and educate the public about steps to take after the sirens sound can help improve the response plan.

Status

Not implemented at this time.

Implementation Strategy

Detailed information on joining the program can be found at NOAA's website:

<http://www.stormready.noaa.gov/tsunamiready/index.htm>.

Lead Agency

Tulalip and Quil Ceda OEM

Funding Options

Tulalip Operating Budget, other grants

Cost	Timeline	Hazards	Goals
Staff time	Short-term, ongoing	Severe Weather, Flooding, Tsunamis	1, 2, 3, 4



9: Utilize Geographic Information Systems (GIS) in decision-making processes.

Problem/Opportunity

GIS offers a quick and comprehensive tool to identify problems and opportunities.

Status

Ongoing. The Tulalip OEM has been working closely with Tulalip Data Services and Tulalip GIS to assess critical facilities and to map hazards.

Implementation Strategy

Utilize GIS software to aid in reducing risk from hazard. This would include educating decision makers about how hazards can be analyzed using GIS. Using FEMA standards for encoding building and infrastructure data will help coordinate planning efforts with HAZUS software and increase the speed and accuracy of damage reporting after an event.

Lead Agency

Tulalip Community Development, Tulalip Data Services, Tulalip OEM

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	All	1, 2, 4

10: Assess the Tulalip Tribes evacuation and primary response routes.

Problem/Opportunity

The Tulalip Tribes Comprehensive Emergency Management Plan (CEMP) identifies evacuation and primary response routes. Some of the same roads are used and may cause problems in the event of a disaster. An analysis of other potential routes is needed to ensure that traffic congestion does not impede response efforts during or after a disaster. Additional work may need to be done to roads so that they can serve as an evacuation or primary response route.

Status

This action has not been implemented at this time. An alternate route to connect the I-5/Quil Ceda Village area to the Administration Building and Tulalip Bay area, bypassing Marine Drive, has been proposed for evacuation, traffic and economic reasons. It is as yet undecided if this route will be constructed.

Implementation Strategy

- Reassess the Tulalip Tribes evacuation and primary response routes.
- Develop new routes where necessary.

Lead Agency

Tulalip Police Department, Emergency Management

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Short-term	All	2



11: Ensure that critical facilities and infrastructure are retrofitted or built to standards that make them less vulnerable in a hazard event.

Problem/Opportunity

Critical facilities and infrastructure in Tulalip may be at risk to failure during or after an event. There are methods of retrofitting or building to a certain standard that will reduce the risk of failure.

Status

Ongoing. More work needs to be done to involve private businesses and forge partnerships with other communities.

Implementation Strategy

The Emergency Management Coordinator could implement this strategy.

- Develop a contact at each of the agencies that impact the Tulalip Tribes so that the Tulalip Tribes can stay updated about what is being done to reduce risk.
- Jointly analyze high-risk areas and develop mitigation strategies that address the risk. Initial focus should be given to critical facilities and infrastructure in NEHRP D and E soils.
- Maintain contact and work with agencies to ensure that the critical facilities and infrastructure are retrofitted or built to standards that make them less vulnerable in a hazard event.

Lead Agency

Tulalip Office of Emergency Management

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	All	1, 2, 4

12: Improve & expand storm water drainage, dams, detention and retention system capabilities.

Problem/Opportunity

Flooding in Tulalip is related to inadequate capacity in the water system and the large amount of impervious surfaces in the highly developed areas. During and after heavy rains there has been flooding of roadways, yards and driveways and several structures.

Status

The Utilities Department commissioned studies from a private engineering firm to study the water supply and disposal issues. Long-term planning has been funded and is underway.

Implementation Strategy

- Analyze reports of flooding from past years and determine problem areas.
- Determine if drainage, dams, detention and retention system capabilities are adequate in these areas.
- Prioritize areas that need the drainage, dams, detention and retention system capabilities expanded.
- Begin expanding the drainage, dams, detention and retention system capabilities in the order of prioritization.

Lead Agency

Tulalip Utilities Department

Funding Options

Tulalip Capital Improvement Budget, Hazards Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program

Cost	Timeline	Hazards	Goals
Staff time for analysis	Long-term	Flooding, Severe Weather	1, 2



13: Have Tulalip become a Firewise community

Problem/Opportunity

The mitigation planning effort has identified that much of the interior of the Tulalip Reservation is undeveloped forest. During dry conditions, especially during the summer, a wildfire can develop, either from storms or by careless human behavior. Due to limited access into the forest areas, a small fire can easily grow and spread unchecked into the residential developments surrounding the interior Tulalip area. Joining Firewise can make the community more aware of the potential hazard and to develop and implement mitigation efforts to reduce risk.

Areas near critical facilities and housing developments, in particular, should be checked for possible fuel sources. Public information regarding debris burning and fireworks in these areas may further decrease the risk.

Status

Not implemented at this time.

Implementation Strategy

A staff person from the Tulalip OEM and/or Community Development will be responsible for reviewing material on Firewise.org and working with the local fire department and community to implement mitigation measures.

Lead Agency

Tulalip OEM, Community Development and Tulalip Fire Dept.

Funding Options

Tulalip Operating Budget, other grants as they become available

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	Wildfire	1, 2, 3, 4

14: Have Tulalip become a StormReady community

Problem/Opportunity

NOAA's StormReady program is a great opportunity to make Tulalip safer from severe storms while also making the community more aware of the effects storms can have on property and lives. StormReady communities are better prepared to save lives from the onslaught of severe weather through better planning, education, and awareness.

Status

Not implemented at this time.

Implementation Strategy

Detailed information on joining the program can be found at NOAA's website:

<http://www.stormready.noaa.gov/>

Lead Agency

Tulalip and Quil Ceda OEM

Funding Options

Tulalip Operating Budget, other grants

Cost	Timeline	Hazards	Goals
Staff time	Short-term, ongoing	Severe Weather, Flooding, Tsunamis	1, 2, 3, 4



15: Assessments and mapping of critical facilities and infrastructure

Problem/Opportunity

Better mapping and assessments of critical facilities and infrastructure, especially those that have cultural and economic value, are needed for the Tulalip Tribes. This effort has been on-going, but more needs to be done. The Tulalip Tribes envision making the Tulalip Reservation a national leader in the mapping and assessment of critical facilities and infrastructure and plan to do so through continued planning efforts, such as the Quil Ceda Village Hazard Mitigation Plan.

Status

Ongoing. The GIS team created a shapefile with footprints of major buildings, whether they are tribal or non-tribal, their height, purpose and if they contain showers, kitchens or generators. This shapefile will be further expanded to include data such as typical number of persons, building construction type and year, and other information to enable accurate modeling using FEMA's HAZUS software. Water and sewer infrastructure is mapped but also requires more information to be compatible with HAZUS.

Implementation Strategy

A PDM planning grant for the Quil Ceda Village as well as future grants for plan updates will be used to implement this. Also Tulalip Data Services and Tulalip Community Development will be part of this effort and will contribute on-going staff time.

Lead Agency

Tulalip OEM and Quil Ceda OEM with Tulalip Data Services/GIS

Funding Options

PDM grants, Homeland Security grants, Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
\$6,000 for QCV	Short-term, ongoing	All	1, 2, 3, 4

16: Promote use of new technology in hazard mitigation and emergency preparedness

Problem/Opportunity

One of the most important elements to mitigation and emergency preparedness is awareness. The general public, as well as critical operations personnel, are often unaware of the risk of hazards and what actions to take during a disaster event. Public awareness programs can provide information about mitigation measures for different hazards as well as preparedness, response and recovery measures after a disaster event. The use of current technologies can help with the distribution of crucial information in a more organized and expeditious manner.

Status

Ongoing

Implementation Strategy

The Emergency Management Coordinator could implement this strategy.

- Develop a partnership with the Tulalip Data Services for the purpose of distributing crucial information on the Tulalip Tribes website.
- Develop and promote the use of the Internet and video technologies for providing training opportunities to the community, as well as critical operations personnel.

Lead Agency

Tulalip Data Services, Tulalip OEM

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	All	1, 3



17: Seismically retrofit and install back-up generators for the Tribal Center, Kenny Moses Building and the Quil Ceda Casino

Problem/Opportunity

Many of Tribe's most critical facilities lack the structural integrity to withstand a major event, particularly an earthquake. Furthermore they do not have the ability to maintain operations after an event. The loss of power can occur easily in a rural area like the Tulalip Reservation. Thus it is essential that these facilities are seismically retrofitted and have back-up power to withstand and continue operations after a major event. So far 3 facilities have been identified and prioritized as needing seismic retrofitting and back-up generators: the Kenny Moses Building, the Tribal Center, and the Quil Ceda Casino, all older structures built before building codes were in place.

Status

Back-up generators have been installed at the Administration Building and both Casinos. Seismic retrofitting has not been completed at this time.

Implementation Strategy

An estimate will be made of the costs to implement this strategy. A benefit-cost analysis will be conducted for feasibility. Then a PDM project grant will be applied for to FEMA in order to help secure funding.

Lead Agency

Tulalip OEM, Tulalip Building Maintenance

Funding Options

PDM Grant Funding, Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
n/a	Ongoing, as funds are available	All	1, 2

18: Relocate homes located on the bluff at Hermosa Point

Problem/Opportunity

Many homes on Hermosa Point are located at the top edge of a steep and rapidly eroding bluff. These homes are owned by tribal members who depend on the lease income these homes generate. Removal of the homes would mean loss of income for tribal members. Thus the best alternative would be to relocate the vulnerable homes away from cliff, either onto safer locations on the same property or to nearby, undeveloped lots.

Status

Ongoing. Prioritization and mapping are needed, similar to the buyout proposed in Action Item 7.

Implementation Strategy

Close collaboration amongst the Tulalip agencies and local homeowners will identify which properties to prioritize for relocation. The Tulalip OEM will prepare project grants, if applicable, each year in order to relocate homes.

Lead Agency

Tulalip OEM, Tulalip Natural Resources, Tulalip Community Development

Funding Options

FEMA PDM grant funding is expected to provide much of the financing.

Cost	Timeline	Hazards	Goals
\$200,000+	Ongoing	Landslides, Earthquakes	1, 4



19: Create and maintain partnerships with all agencies that impact the Tulalip Tribes to implement non-structural retrofitting in Tribal households, facilities and businesses.

Problem/Opportunity

Most injury and business loss is due to non-structural damage such as toppling shelves and hazardous material spills. These are largely preventable through relatively simple, non-structural measures.

Status

Ongoing.

Implementation Strategy

Provide information and/or training about how to implement non-structural retrofitting. The Emergency Management Coordinator could implement this strategy.

- Coordinate assessments of non-structural hazards for Tribal facilities.
- Prioritize the order by which Tribal facilities should be non-structurally retrofitted.
- Provide education and training about non-structural hazards and non-structural retrofitting for critical facilities, schools, health care facilities, residences and businesses. Initial focus should be given to facilities on NEHRP D and E Soils.
- Apply for grants that could provide funding for non-structural retrofitting.

Lead Agency

Tulalip OEM, Tulalip Utilities Department, Tulalip Buildings Maintenance

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
\$25,000	Ongoing	Earthquakes	2, 4

20: Join the National Flood Insurance Program (NFIP)

Problem/Opportunity

The Tulalip Tribes currently does not have Flood Insurance Rate Maps (FIRMs) prepared for its Reservation, so there is no clear understanding of how flooding could affect the Reservation. Past events have shown however that Tulalip Creek and well as some of the lakes/ponds have a tendency to overtop during severe conditions. Furthermore severe storms cause damage every year to low-lying structures along the coast. Thus the Tulalip Tribes find it imperative that these vulnerable areas are definitively identified so appropriate actions can be taken to protect vulnerable structures and facilities.

Status

Not implemented at this time. Joining the NFIP requires a more significant investment than stated in the previous plan, including having a Certified Floodplain Manager on staff.

These mitigation activities were ranked and prioritized through meetings with Tribal officials and staff. They were ranked by need and technical and fiscal feasibility.

Implementation Strategy

As FIRMs are prepared for Tulalip and Snohomish County, the Tulalip Tribes will focus on implementing NFIP requirements in order to join the program.

Lead Agency

The Tulalip Office of Emergency Management as well as the Office of Community Development will take a lead in implementing this measure.

Funding Options

Tulalip Operating Budget

Cost	Timeline	Hazards	Goals
Staff time	Ongoing	Flooding, Severe Weather	1, 2, 3, 4



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