CHIGNIK BAY TRIBAL COUNCIL

TRIBAL HAZARD MITIGATION PLAN [2019 – 2024]

FINAL Revision 0
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Prepared for:

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ACRONYMS AND ABBREVIATIONS

%	percent
°F	degrees Fahrenheit
ANTHC	Alaska Native Tribal Health Consortium
BBAHC	Bristol Bay Area Health Corporation
BBNA	Bristol Bay Native Association
BIA	Bureau of Indian Affairs
Bristol	Bristol Engineering Services Company, LLC
CFR	Code of Federal Regulations
Community	Chignik
Council	Chignik Bay Tribal Council
DCCED	State of Alaska Department of Commerce, Community, and Economic Development
DHS&EM	State of Alaska Division of Homeland Security and Emergency Management
DOT&PF	Alaska Department of Transportation and Public Facilities
DOTID	Department of Transportation and Infrastructure Development
FEMA	Federal Emergency Management Agency
FMA	Flood Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
ID	Identification
IGAP	Indian General Assistance Program
km	kilometer
LPSD	Lake and Peninsula School District
MM	Modified Mercalli Scale
mph	mile per hour
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PDM	Department of Homeland Security Pre-Disaster Mitigation
SCERP	Small Community Emergency Response Plan
THMP	Tribal Hazard Mitigation Plan

ACRONYMS AND ABBREVIATIONS (Continued)

Tribe	Chignik Bay Tribal Council
TTP	Tribal Transportation Program
USACE	US Army Corps of Engineers
USGS	US Geological Survey

EXECUTIVE SUMMARY

The Tribal Hazard Mitigation Plan (THMP) for Chignik Bay, Alaska (Community) was developed in accordance with the requirements of the Stafford Act and Title 44 of the Code of Federal Regulations (CFR). Bristol Bay Native Association (BBNA) represents the Chignik Bay Tribal Council (Tribe) and provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of the THMP. Planning Team members from the Community were identified by the Tribe to assist in the development of this plan.

Hazard mitigation reduces potential losses from future disasters. It is the goal of the Chignik Bay Tribal Council (Council) to develop a disaster – resistant community for the general public and Tribe members by identifying hazard mitigation actions. These actions will reduce the impact of natural hazards on the Community and encourage the restoration and protection of natural and cultural resources.

This plan contains current community information, documents the planning process for the THMP, identifies the natural hazards that have an impact on the Community, identifies community assets, analyzes how the assets are impacted by natural hazards, and identifies the Community's vulnerability to these hazards. Additionally, the THMP lists the Community's mitigation goals and prioritized mitigation actions.

The Planning Team identified natural hazards that could affect the Community. The following is a list of natural hazards that have had an impact on the Community.

- Avalanche – The Community is surrounded by steep topography. It can separate residents from critical infrastructure on either side of the Community.
- Earthquake – Earthquakes occur and can result in damage to utilities and buildings. It can also trigger the onset of other natural hazards such as avalanches and landslides.
- Erosion – Spring thawing events and seasonal rainfall events cause many waterfalls around the Community due to the steep topography which in turn causes erosion to occur throughout the Community and undermines homes, roads, and other critical infrastructure. High runoff events cause the rivers to rise and endangers the stability of bridges and utilities that are supported by the bridges.
- Extreme Cold – Water pipes freeze and burst due to extreme cold temperatures. This can cause damage to the entire water line as well as homes and structures.
- Flood – Flooding in the Community occurs due to heavy seasonal rainfall events and spring thawing events, which fill low lying areas of the Community and rivers/creeks. Additionally, high tide events can push water into low lying areas.

These events cause damage to homes, utilities, and other structures. The airport can become saturated making it in-accessible to aircraft.

- Landslide – Mud slides occur during spring thaw events and covers the road which separates the Community and limits access to critical infrastructure and damages roads.
- Severe Wind – High wind events can result in damage to structures and utilities causing power outages, a reduction of visibility in winter due to blowing snow, decreased quality of air due to dust, and limits the accessibility of the Community via air transportation.
- Severe Winter Weather – Severe winter weather events and cold temperatures can result in power outages, and limits air transportation in and out of the Community. Icy conditions can present a hazard to walking residents within the Community.
- Tsunami – The Community is located on Anchorage Bay and receives tsunami warnings each year, but have not yet experienced a tsunami to this point.
- Volcano – Ash from the nearby volcano of Mt. Veniaminof, and a number of active volcanos along the Alaska Peninsula and Cook Inlet has an impact on air transportation in and out of the Community. This also has an impact on equipment and air quality for community members.
- Wildfire – Wildfires destroy subsistence resources, structures, and is a sever risk to human life.

Mitigation goals were selected by the Planning Team for the identified natural hazards. These goals are broad statements that represent the Community's vision for reducing or avoiding losses from the identified hazards. The following is a list of mitigation goals:

- Build the capacity of the Tribe to prepare, respond to, and recover from disasters.
- Reduce the possibility of damages due to avalanches.
- Reduce the possibility of damages due to earthquakes.
- Reduce the possibility of damages due to erosion.
- Reduce the possibility of damages due to extreme cold.
- Reduce the possibility of damages due to floods.
- Reduce the possibility of damages due to landslides.
- Reduce the possibility of damages due to severe winds.
- Reduce the possibility of damages due to severe winter weather.
- Reduce the possibility of damages due to tsunamis.

- Reduce the possibility of damages due to volcanoes.
- Reduce the possibility of damages due to wildfires.

In addition to the identified hazards and the mitigation goals, the Planning Team identified mitigation actions to support the THMP mitigation goals. The following is a list of the high priority mitigation actions.

- Acquire and place communication devices on each side of the Community at public locations such as the City office, Tribal office, clinic, and others.
- Acquire emergency supplies such as food, water, medical supplies, and other needs for the Community.
- Update the Community emergency plan and Small Community Emergency Response Plan (SCERP).
- Post Emergency contact numbers for surrounding communities, local entities, and the region around the Community.
- Provide a checklist for emergency kits for personal/family kits.
- Install avalanche warning signs in areas that experience avalanches.
- Educate residents about having personal emergency kits for household members.
- Conduct inspections and repairs as needed on Indian Creek Bridges which is the evacuation route.
- Keep extra culverts available for repairs.
- Install “Falling Rock” signs around landslide prone areas.
- Maintain and repair power poles when leaning and as needed.
- Build a Tsunami shelter on both sides of the Community.
- Install “Evacuation Route” signs throughout the Community.
- Develop a plan to move people to higher ground during natural hazards and acquire a community bus.
- Schedule and hold regular test tsunami evacuations.
- Supply of masks at the clinic for residents and special masks for residents with respiratory issues.
- Educate residents of the importance to have prescribed medication accessible.
- Provide education on volcanoes and specific associated hazards.

- Ensure there is a current volunteer firefighter group and that volunteers are trained.
- Maintain fire equipment and fire hydrants. Update equipment as needed and replace hoses.

The THMP is a living document that will be reviewed on an annual basis, and updated every five years. The annual reviews will monitor the relevance and implementation of the mitigation action plan, and evaluate the effectiveness and progress of the THMP. The annual evaluation of the THMP will include a review of any changes to assets, impacts from hazards, or any additional changes to the plan.

1.0 INTRODUCTION

Bristol Bay Native Association (BBNA) is an Alaska Native Regional Non-Profit Corporation and tribal consortium. Incorporated under state law, corporation bylaws are structured as a pure tribal consortium. The 31 federally recognized tribes in the Bristol Bay region make up the members of the non-profit corporation. The 31 tribes are represented on the BBNA Board of Directors by their elected tribal presidents, or the president's designee (who must be a tribal member). Therefore, BBNA is directly controlled by the tribal governments it represents.

BBNA is a federally recognized tribal consortium for contracting purposes and is a "Tribal Organization" as defined in the Indian Self-Determination and Education Assistance Act. BBNA operates dozens of grants and contracts under various types of eligibility. Understandably, eligibility of each grant is controlled by the regulations and authorizing legislation of each particular funding source. BBNA operates both Indian and non-Indian programs.

BBNA represents all tribes within the Bristol Bay Region, and as such provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. On behalf of the Chignik Bay Tribal Council (Council), BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of this Tribal Hazard Mitigation Plan (THMP) for Chignik Bay, Alaska (Community). The THMP was prepared to meet the requirements of the Stafford Act and Title 44 of the Code of Federal Regulations (CFR). By meeting these requirements, it makes the Community eligible for funding through state and federal mitigation grant programs.

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning is to maintain a process that leads to hazard mitigation actions. This THMP identifies the natural hazards that affect the Community, identifies actions to reduce losses from those hazards, develops long-term strategies to reduce the impacts of future events on people, property, and the environment, and establishes a coordinated process to implement the plan. The THMP establishes goals and objectives and associated actions to reduce and mitigate the threat of natural hazards to life, property, infrastructure, economic stability and emergency response capabilities in the Community while encouraging the protection and restoration of cultural and natural resources.

It is the goal of the Council to create a disaster-resistant community for the Chignik Bay Tribal Council (Tribe) members and the general public in the Community. The THMP includes information to assist government leaders and residents with current and future planning efforts to efficiently and effectively mitigate natural hazards in the Community.

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2.0 COMMUNITY DESCRIPTION

This section describes the location and geography, climate, history, demographics, and economy of the Community.

2.1 LOCATION AND GEOGRAPHY

The Community is located on Anchorage Bay on the south shore of the Alaska Peninsula. It lies 450 miles southwest of Anchorage and 260 miles southwest of Kodiak. The Community lies at approximately 56.2928 North Latitude and 158.402° West Longitude (See Figures 1 and 2). The Community is located in Section 7, Township 045S, and Range 058W along the Seward Meridian. The Community is located in the Aleutian Islands Recording District. The area encompasses 11.7 square miles of land and 4.2 square miles of water (State of Alaska Department of Commerce, Community, and Economic Development [DCCED], 2018).

2.2 CLIMATE

Climate can have a significant impact on the hazards that affect the Community. The Community's climate can also have an impact on the goals and mitigation strategies that are decided upon. The following is a climate summary of the Community:

The Community falls within the southwest maritime climate zone, characterized by persistently overcast skies, high winds, and frequent cyclonic storms (DCCED, 2018). Annual precipitation averages 127 inches, with an average annual snowfall of 58 inches. The average winter temperatures range from 21 to 50 degrees Fahrenheit (°F), and the average summer temperatures range from 39 to 60 °F. Extreme temperatures range from as high as 76°F to as low as -12°F have been recorded (NOAA, November 2013).

2.3 HISTORY

A village called "Kalwak" was originally located here; it was destroyed during the Russian fur boom in the late 1700s. Chignik, meaning "big wind," was established in the late 1800s as a fishing village and cannery. A four-masted sailing ship called the "Star of Alaska" transported workers and supplies between Chignik and San Francisco. Chinese crews from San Francisco traveled to Chignik in early spring to make tin cans for the cannery. Japanese workers followed in mid-June to begin processing. A post office was established in 1901. Coal mining occurred from 1899 to 1915. Chignik became an incorporated city in 1983. Today, two of the historical canneries are still in operation (DCCED, 2018).

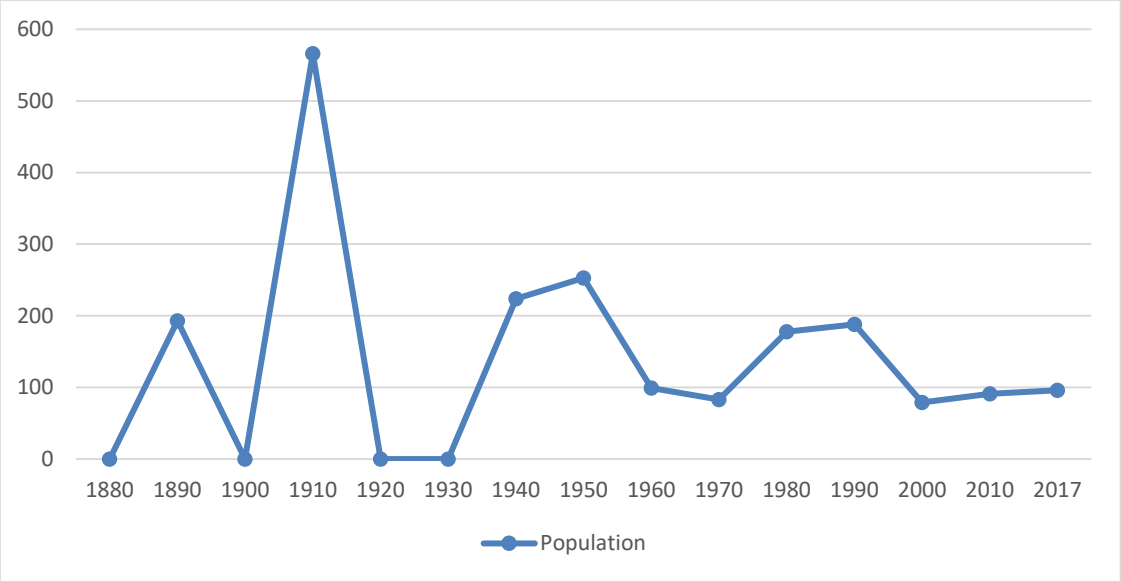
2.4 ECONOMY

The local government, and educational and health services provides the main employment opportunities in the Community (ALARI, 2018). Other Community employment opportunities include manufacturing, construction, information, professional and business services, and trade, transportation and utilities. According to the 2010 Census, the median household income in the Community was $95,625. The Community's primary source for food is derived from a subsistence lifestyle. This lifestyle includes activities such as hunting, fishing, berry picking, and other similar activities (DCCED, 2018).

2.5 DEMOGRAPHICS

The 2017 State of Alaska Department of Commerce, Community, and Economic Development (DCCED) certified population is 96 (DCCED, 2018). Exhibit 2-1 depicts a historic representation of the population of the Community.

Exhibit 2-1: Population History



Source Note: Census Population History retrieved from DCCED
https://www.commerce.alaska.gov/dcra/dcraexternal/community/

The 2010 census recorded 91 residents with a median age of 46. The Community is principally an Alaska Native community with 57.14 percent (%) Alaska Native, 34.04% White, 4.40% two or more races. In 2010, the male and female population was 51 and 40 respectively. The 2010 census also revealed that there were 41 households with an average household size of three people (DCCED, 2018).

3.0 PLANNING PROCESS

This section provides information about the planning process that took place during the development of the THMP. It provides an overview of the planning process, the planning team, the public involvement efforts and documentation, the review and incorporation of existing plans, reports and studies, and the plans to integrate the THMP into other planning processes. Documentation of the planning process and public involvement is located in Appendix A and Appendix B, respectively.

3.1 PLANNING PROCESS

The planning process was developed following the requirements of 44 CFR 201.7(c)(1). The Department of Homeland Security Pre-Disaster Mitigation (PDM) grant provided funding and project oversight to the BBNA Department of Transportation and Infrastructure Development (DOTID). Bristol, BBNA's contractor, guided the development of a project team to assist BBNA DOTID with the THMP development.

The planning process took place from October 3, 2018 to February 20, 2019. The following steps describe the planning process to develop the THMP and incorporates applicable work completed prior to 2018. All planning documents created or used are included in Appendix A.

1. Establish the Planning Team: An initial meeting was held with the Council to establish a point of contact and identify other team members. The titles and organizations of the Planning Team members are identified in Table 3-1. During the initial meeting there was a brief discussion about hazards that affect the community as described in the Risk Assessment (Section 5.0).
2. Education of the Planning Team: The THMP planning process was described to the Planning Team on October 3, 2018 and participants were asked to help identify hazards that affect the Community, and critical infrastructure.
3. Organize Resources: Members of the Planning Team identified resources, including staff, agencies, and local community members who could provide technical expertise and historical information needed in the development of the THMP (see Sections 3.2 and 3.3.1).
4. Assess Risks: The Planning Team identified the hazards and assets within the Community. With the assistance of Bristol, the Planning Team developed a risk analysis for the community assets in relation to the identified hazards. The Planning Team identified the areas of greatest concern to the Community and developed vulnerability statements. Section 5.0 provides a detailed description of the Risk Assessment.

5. Assess Capabilities: The Planning Team reviewed current administrative and technical, legal and regulatory, and fiscal capabilities to determine whether existing provisions and requirements adequately address relevant hazards (see Section 3.4 and Section 6.1).
6. Develop a Mitigation Strategy: After reviewing the risk analysis and vulnerability statements, the Planning Team developed the mitigation goals. Once goals were established, the Planning Team identified a comprehensive range of potential mitigation actions. Subsequently, the Planning Team refined the prioritized mitigation actions, and evaluated and prioritized the actions for implementation. Section 6.0 provides a detailed description of the Mitigation Strategy.
7. Monitor, Evaluate, and Plan Updates: The Planning Team developed a process to monitor, evaluate, and update the THMP to ensure it will be used as intended (see Section 4.0). Plan maintenance forms can be found in Appendix C. The Planning Team also established a plan to track the progress of the identified mitigation actions (see Section 6.7). Mitigation tracking forms are located in Appendix E.

In addition to the steps above the Planning Team encouraged community input throughout the planning process. Section 3.3 details how the public was involved in the planning process.

3.2 PLANNING TEAM

The Planning Team is shown in Table 3-1, 44 CFR 201.7(c)(1).

Table 3-1: Hazard Mitigation Planning Team

Name	Title	Organization
Peter Anderson	Mayor	City of Chignik
Joanna Orloff	City Clerk	City of Chignik
Alanna Anderson	Board Member	City of Chignik
Debbie Carlson	Treasurer / Administrator	Chignik Bay Tribal Council
Jeanette Carlson	Secretary / Environmental Program	Chignik Bay Tribal Council
Dan Breeden	Director	BBNA DOTID
Annie Fritze	Program Manager	BBNA DOTID
Isaac Pearson	Senior Engineer	Bristol (THMP Consultant)
Danielle Dance	Civil Engineer	Bristol (THMP Consultant)

3.3 PUBLIC INVOLVEMENT

Public involvement is important to the planning process of the THMP, 44 CFR 201.7(c)(1)(i). The Council defines "public" as living in the tribal service area or on tribal land, as well as any tribal member or citizen not living on the tribal lands that desires to provide comment on the THMP. It is important for the public to understand and be educated on the Community's priorities. The public also provides valuable insight into issues of concern, identifying community assets and areas that need improvement. The public can provide important information about the history of hazards that have affected the area. Additionally, they can provide ideas for continuing public involvement after the plan has been adopted.

A public meeting was held by BBNA DOTID and Bristol on April 25, 2019 in the Community to educate and receive feedback on the THMP. During the meeting, participants were given the opportunity to discuss how they have personally been impacted by the identified hazards in their community. They were also given the opportunity to discuss mitigation strategies that they felt would help prevent future losses due to the hazards. Additionally, the community was asked how they would like to be included in the remaining planning process and throughout the implementation of the mitigation strategies.

Newsletters were used to inform the public about the project. The first newsletter provided an overall description of the project, its purpose, the general process for plan development, and ways for the public to participate in the development of the plan. The second newsletter was sent to inform the public that a draft of the THMP was ready for review and provided the dates for a public review and comment period.

In addition to the public meeting and newsletters, residents or interested parties were encouraged to participate in, and had access to a public survey. This survey was available and located in the tribal office throughout the planning process and during the public meeting.

Nineteen surveys were completed and returned. The residents of the Community identified through the survey that they are most concerned about wildfires (see Exhibit 3-1). Additionally, Exhibit 3-2 illustrates the opinions of the residents regarding the importance of community assets. A copy of the survey distributed to community members and a complete summary of responses can be found in Appendix B.

Exhibit 3-1: Natural Disaster Concern (Survey Question #2)

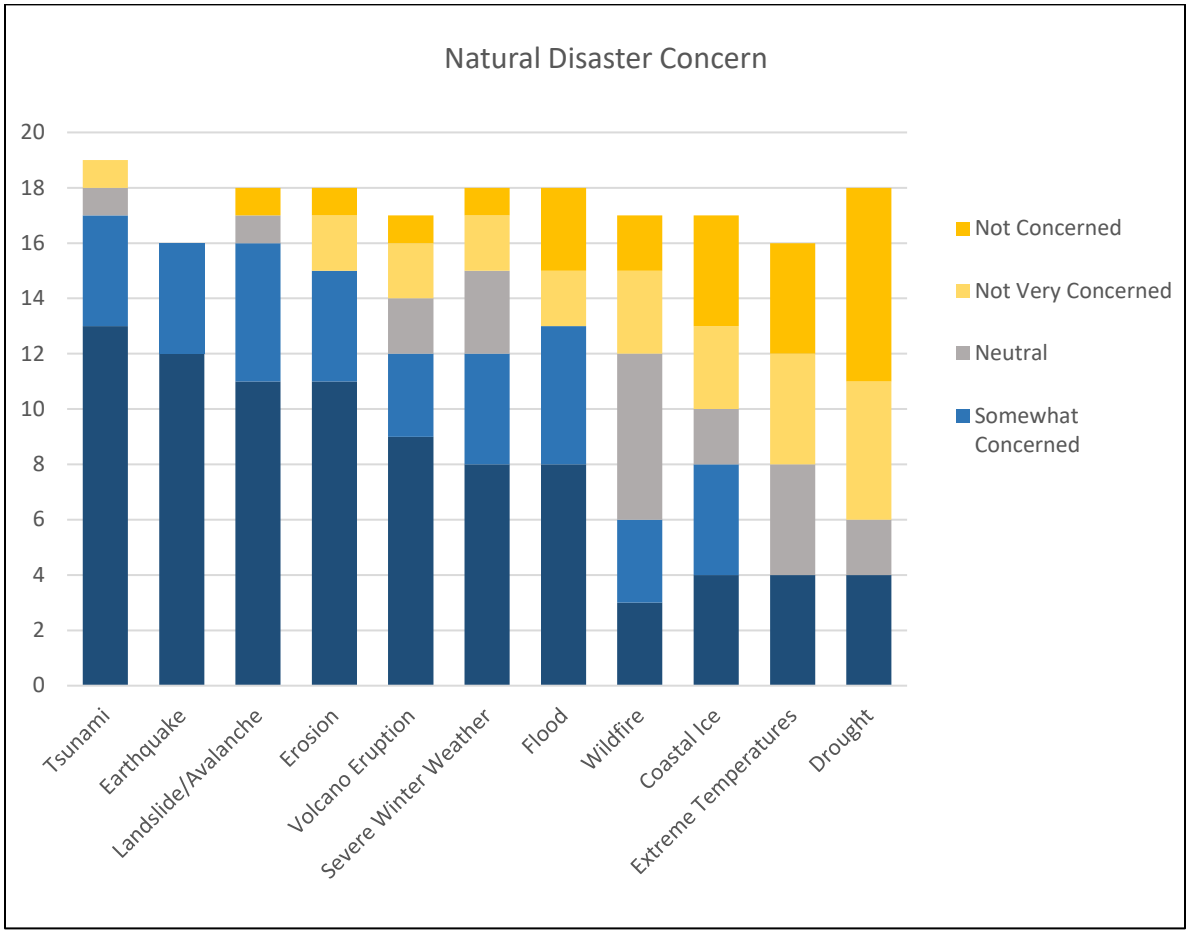
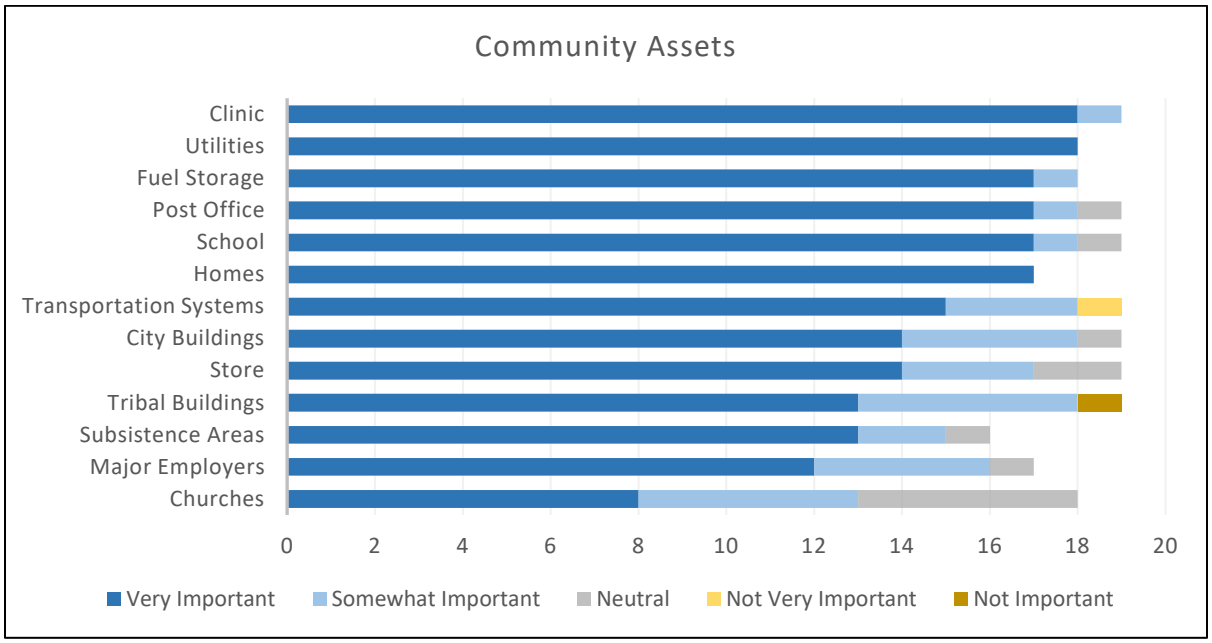


Exhibit 3-2: Community Assets (Survey Question #7)



All documentation and materials used to involve the public are located in Appendix B. This includes: public meeting advertisements, sign-in sheets, presentations, handouts, newsletters, surveys and a summary of responses, and any comments received via email, phone, or facsimile.

3.3.1 Other Communities, Tribal Agencies, and Regional Agencies Involved

The Planning Team worked to include all stakeholders in the planning process and development of the THMP, 44 CFR 201.7(c)(1)(ii). Table 3-2 provides the other stakeholders, communities, tribal agencies, and regional agencies that were involved in the planning process and development of the plan.

Table 3-2: Stakeholder Contacts

Stakeholder Type	Stakeholder	Contact Person (Title)	Contact Email
Village for Profit	Far West	Marit Carlson VanDort (President)	marit@fwv-inc.com
Non-Profit Agency	BBNA	Gayla Hoseth (Natural Resources Director)	ghoseth@bbna.com
Non-Profit Agency	BBNA	Carla Akelkok (VPSO Program Manager)	cakelkok@bbna.com
Economic Development	BBNA	Kristina Andrew (Program Manager)	krandrew@bbna.com
Regional for Profit	Bristol Bay Native Corporation	Jason Metrokin (President)	jmetrokin@bbnc.net
Regional Housing	Bristol Bay Housing Authority	Brenda Akelkok (Executive Director)	bakelkok@bbha.org
Regional Hospital	Bristol Bay Area Health Corporation (BBAHC)	Robert Clark (CEO)	rclark@bbahc.org
Regional Hospital	BBAHC	Rebecca Coupchiak (CHAP Supervisor)	rcoupchiak@bbahc.org

Table 3-2 (Continued): Stakeholder Contacts

Stakeholder Type	Stakeholder	Contact Person (Title)	Contact Email
Village Clinic	BBAHC	Madison Ayson (Health Aide)	mayson@bbahc.org
Borough	Lake and Peninsula Borough	Kate Conley (Borough Clerk)	kateconley@lakeandpen.com
Borough	Lake and Peninsula Borough	Nate Hill (Borough Manager)	manager@lakeandpen.com
Municipal	City of Chignik	Richard J. Sharpe (Mayor)	dick.sharpe@yahoo.com
Municipal	City of Chignik	JJ Orloff (City Clerk)	chignikcityclerk@gmail.com
School District	Lake and Peninsula School District	Ty Mase (Superintendent)	tmase@lpsd.com
School	Chignik Bay School	Nate Davis (Principal / Lead Teacher)	ndavis@lpsd.com
Electric Utility	City of Chignik	JJ Orloff (City Clerk)	chignikcityclerk@gmail.com
Telephone	GCI	Lana Woods (Permitting & Compliance Manager)	lwoods@gci.com
State Representative	State of Alaska	Bryce Edgmon (Representative)	representative.bryce.edgmon@akleg.gov
State Senator	State of Alaska	Lyman Hoffman (Senator)	senator.lyman.hoffman@akleg.gov

Applicable stakeholders were contacted by e-mail to invite their participation in the planning process. Applicable comments provided by these stakeholders are included in Appendix B.

3.4 INCORPORATION OF EXISTING PLANS / STUDIES / REPORTS

During the development of the THMP the Planning Team reviewed any applicable existing plans, studies, and reports, 44 CFR 201.7(c)(1)(iii). Table 3-3 lists those documents reviewed by the Planning Team and contains a summary of the incorporated content.

Table 3-3: Existing Plans, Studies, and Reports Reviewed

Plans/Studies/Reports Reviewed for this THMP	Summary of Incorporated Content
US Army Corps of Engineers (USACE) Alaska Baseline Erosion Assessment	This report identifies the Community as having erosion issues (USACE, 2009).
USACE Erosion Assessment	The banks of Anchorage Bay are periodically eroded by coastal waves, high tides and winds. (USACE, 2007).
State of Alaska Hazard Mitigation Plan	Identifies profiled hazards, provides resources, and provides goals and mitigation strategies identified by the State of Alaska Division of Homeland Security and Emergency Management (DHS&EM) (DHS&EM, 2013).
Alaska Emergency Response Guide for Small Communities	This guide provides general procedures to assist local officials in preparing for, responding to, and recovering from emergency and disaster situations developed by the DHS&EM (DHS&EM, 2017).
Lake and Peninsula Borough Multi-Jurisdictional Hazard Mitigation Plan Update	This report provides the Borough mitigation actions and goals. It identified that there was a disaster declaration decalred for the Community in 2002. It also identiies community goals and mitigation strategies (Lake and Peninsula Borough, 2015).
Chignik Bay Community Plan	This report helps provide a vision for the Community with goals and implementation actions (City of Chignik Bay, 2009).

NOTE: Complete reference information for the Plans/Studies/Reports in the table above is included in Section 8.0 of this plan.

3.5 INTEGRATION INTO OTHER TRIBAL PLANNING PROCESSES

The Planning Team worked to share and integrate the information collected during the planning process with other tribal planning processes, 44 CFR 201.7(c)(1)(iv). They accomplished this by attending tribal planning meetings when invited and providing regular updates to the Council. Through this process the Planning Team was also able to identify projects or actions for the mitigation plan.

There were no FEMA programs or initiatives occurring at the time of the planning process. Therefore, the planning process was not integrated into other FEMA programs or initiatives.

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4.0 PLAN MAINTENANCE

This section provides a formal maintenance plan to monitor, evaluate, and update the THMP to ensure that it remains an applicable and active document, and that improvements and updates to the THMP happen in a coordinated and organized manner, 44 CFR 201.7(c)(4)(i). This section also describes how the Council plans to continue public involvement in the maintenance of the plan. Appendix C contains questionnaires and forms to track the maintenance process.

4.1 MONITORING

The Planning Team will continue to monitor the progress of the mitigation actions to track the relevance and implementation of the mitigation action plan (Section 6.5) and all of its elements. Once a year from the time that the plan is adopted, the Tribal Administrator, or designee, will track the status of implementation of the identified mitigation actions and provide a status report to the Council. A more thorough review, by the responsible agency, of the progress of each identified mitigation action will be addressed in Section 6.7. The THMP Maintenance Monitoring Form (THMP Form 4-1) is located in Appendix C.

4.2 EVALUATING

The Planning Team will evaluate the THMP, in its entirety, to assess its effectiveness at achieving its stated goals and purposes. The Planning Team will evaluate the progress towards the THMP goals on an annual basis from the time the plan was adopted. The THMP Plan Update Evaluation Form (THMP Form 4-2) is located in Appendix C. This evaluation will include a review of the following:

- Identification of agencies, stakeholders, residents that have participated in THMP implementation efforts;
- Identification of notable changes to the risk assessment;
- Identification of new hazards and their impacts;
- Identification of new reports or planning materials available to the Community; and
- Identification of new hazard mitigation projects.

The Tribal Administrator, or designee, will contact the Council and other applicable stakeholders identified in Sections 3.2 and 3.3.1 to determine if the THMP needs to be updated to address newly identified hazards, new reports, or new hazard mitigation projects. The Tribal Administrator, or designee, will e-mail all stakeholders summarizing this process and request a planning meeting, if an update is warranted.

4.3 UPDATING

The THMP will be updated at least once every five (5) years. The plan can be revised prior to this when significant changes need to be made, if any necessary changes are identified during the evaluation process (Section 4.2). The Tribal Administrator, or designee will contact the Council and Planning Team no later than the beginning of the fourth year following the THMP adoption to begin the process for updating the plan. The Planning Team will review and incorporate all applicable information collected or received to update the THMP. Comments received from the public and information collected from the THMP evaluation form (Form 4-2 located in Appendix C) and mitigation action plan review forms (Form 6-2 located in Appendix E) will aid the Planning Team in refocusing on any possible new hazards, or available resources.

In addition to reviewing the plan maintenance forms and mitigation action plan review forms the Planning Team will begin the following activities:

- Request grant assistance to update the THMP.
- Identify sections of the plan that need to be improved and begin brainstorming proposed changes.
- Update and analyze the risk assessment.
  - Review and update the hazard analysis.
  - Review and update the Community assets.
  - Complete a new risk analysis.
  - Re-evaluate the Community Vulnerability statements.
- Update the Community mitigation strategy.
  - Re-evaluate and update the Community mitigation goals.
  - Update and review mitigation actions.
- Update the THMP document.
- Submit updated THMP to FEMA for review and approval.

Table 4-1 identifies the plan maintenance timeline and the tasks that should be completed each year.

Table 4-1: Plan Maintenance Timeline

Year	Action(s)	Applicable Forms
2019	Plan Adoption	N/A
2020	• Monitor status of actions • Evaluate THMP	• THMP Form 4-1 • THMP Form 4-2
2021	• Monitor status of actions • Evaluate THMP	• THMP Form 4-1 • THMP Form 4-2
2022	• Monitor status of actions • Evaluate THMP	• THMP Form 4-1 • THMP Form 4-2
2023	Begin plan update activities (outlined in Section 4.3)	N/A
2024	Finalize THMP update	N/A
2025	THMP Update adopted	N/A

4.4 PUBLIC INVOLVEMENT IN THE PLAN MAINTENANCE PROCESS

The Council is committed to involving the public in the continual maintenance and updating of the THMP, 44 CFR 201.7(c)(4)(iv). A continued effort will be made to identify opportunities to raise community awareness about the hazards that affect the Community. This effort could include attendance and provision of materials at Tribe-sponsored events, outreach programs, and public mailings. Additionally, efforts will be made to include hazard mitigation into Community public meetings when possible.

A paper copy of the THMP and any proposed changes will be available at the Tribal office and at the BBNA DOTID office. An electronic copy of the THMP Plan will also be available from the Tribal office or the BBNA DOTID office. Comments or concerns can be directed to the Tribal Administrator, or designee. Any comments or concerns collected will be included in the annual monitoring effort and considered for inclusion in future THMP updates.

The Planning Team will ensure that the public will be involved in the THMP update. This involvement could be in the form of public meetings, newsletters, or other community correspondence techniques. The public will be given the time to review the draft plan prior to its adoption.

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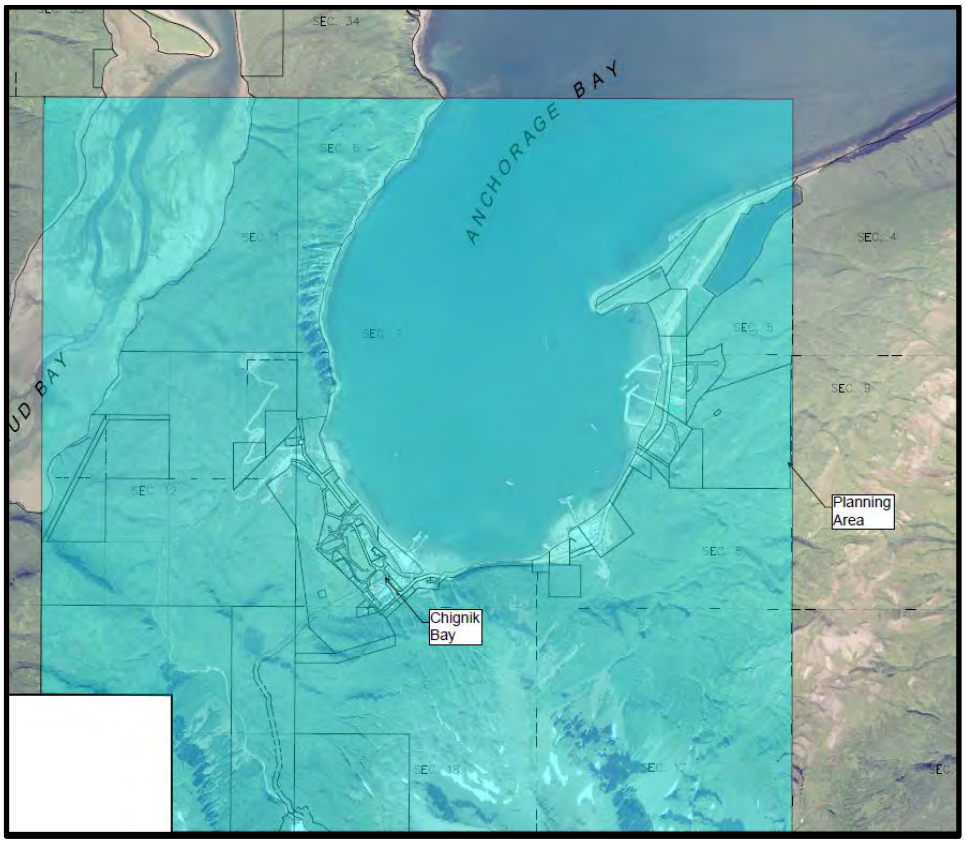
5.0 RISK ASSESSMENT

This section provides an analysis of the hazards that affect the Community planning area, 44 CFR 201.7(c)(2)(i). This section also identifies the Community's assets, analyzes the risks of assets associated with each hazard type, and assesses the vulnerabilities of local people, property, and natural environment.

The Community planning area is shown in Exhibit 5-1. The planning area encompasses Sections 5-8, 17 and 18 of Township 45 South Range 58 West, and Sections 1 and 12 of Township 45 South Range 59 West, of the Seward Meridian. Community trails and subsistence areas may extend beyond the sections shown.

Exhibit 5-1: Planning Area



5.1 HAZARD ANALYSIS

The first step in the risk assessment is to identify the natural hazards that could affect the planning area. Natural hazards result from uncontrollable or unexpected natural events. The Planning Team reviewed 14 possible hazards that could affect the planning area. Each hazard was evaluated based on a range of factors. Table 5-1 through Table 5-4 provide the classifications and definitions of each factor (FEMA, March 2013). These factors included

the location of affected area (Table 5-1), the maximum extent or magnitude of the event (Table 5-2), and the probability of future events (Table 5-3). Based on the rankings from Table 5-1 through Table 5-3 the possible hazards were then ranked again based on their overall impact on the Community (Table 5-4). The hazard identification worksheet (Worksheet 1) is located in Appendix A.

Table 5-1 provides a classification and its definition related to the geographic area that the hazard may affect.

Table 5-1: Location

Color Code	Area Affected	Definition
BLUE	Negligible	• Isolated single-point occurrences • Less than 10% of planning area
GREEN	Limited	• Limited single-point occurrences • 10% to 25% of planning area
YELLOW	Significant	• Frequent single-point occurrences • 25% to 75% of planning area
RED	Extensive	• Consistenct single-point occurrences • 75% to 100% of planning area

Table 5-2 provides classifications and definitions used to determine the significance of each hazard based on maximum extent or magnitude seen in historic events or future probability.

Table 5-2: Maximum Extent or Magnitude

Color Code	Maximum Extent	Definition
BLUE	Weak	• Little to no damage done • Slow speed of onset or short duration of event • Limited classification on scientific scale (if applicable)
GREEN	Moderate	• Some damage and loss of services for days • Moderate speed of onset or moderate duration of event • Moderate classification on scientific scale (if applicable)
YELLOW	Severe	• Devastating damage and loss of services for weeks or months • Fast speed of onset or long duration of event • Severe classification on scientific scale (if applicable)
RED	Extreme	• Catastrophic damage and uninhabitable conditions • Immediate onset or extended duration of event • Extreme classification on scientific scale (if applicable)

Table 5-3 provides classifications with definitions related to the probability of future events happening in the planning area.

Table 5-3: Probability of Future Events

Color Code	Probability of Future Event	Definition
BLUE	Unlikely	• Less than 1% probability of occurrence in the next year • Recurrence interval of greater than every 100 years
GREEN	Occasional	• 1% to 10% probability of occurrence in the next year • Recurrence interval of 11 to 100 years
YELLOW	Likely	• 10% to 90% probability of occurrence in the next year • Recurrence interval of 1 to 10 years
RED	Highly Likely	• 90% to 100% probability of occurrence in the next year • Recurrence interval of less than 1 year

After the possible hazards were evaluated according to location, extent or magnitude, and probable future occurrence each hazard was then ranked according to its overall impact. A hazard's overall impact is the effect or consequence of the hazard on the Community and its assets. The Community's assets are identified and further discussed in Section 5.2. Table 5-4 provides the classifications with definitions to determine the overall impact of each hazard on the planning area.

Table 5-4: Overall Impact

Color Code	Impact	Definition
GREEN	Low	• Event has minimal impact on planning area • Two or more criteria fall in lower classifications
YELLOW	Medium	• Event's impacts on the planning area are noticeable but not devastating • Criteria fall mostly in the middle ranges of classifications
RED	High	• Event is likely/highly likely to occur with severe strength over a significant or extensive portion of the planning area • Criteria consistently fall in the high classifications

Table 5-5 shows a summary of the hazard analysis (also provided in Appendix A, Worksheet 1). This summary identifies each of the hazards evaluated, if the hazard presents a significant impact to the Community, and an explanation of why it was or was not determined to be significant to the Community and further analyzed by the Planning Team.

Table 5-5: Significant Hazards in the Planning Area

Hazard	Significant (Yes/No)	Explanation
Avalanche	Yes	The Community is surrounded by steep topography. The threat of avalanches is present every year. Avalanches can inhibit airport access, damage utilities and endanger community infrastructure.
Drought	No	The Community has regular precipitation and is not concerned by the effects of drought.
Earthquake	Yes	Earthquakes occur in the Community, and can result in damage to buildings, and utilities.
Erosion	Yes	The Community is situated along Anchorage Bay. The rivers are experiencing erosion along the banks which endangers the community waterline under the bridges. Many waterfalls and streams run through the Community which cause erosion. These grow significantly during spring run-off.
Extreme Cold	Yes	Water pipes freeze every winter due to cold weather. Severe cold days require more fuel usages and presents an economic hardship on the residents and community.
Extreme Heat	No	This has not had an impact on the Community.
Flood	Yes	Flooding can occur due to heavy rainfall, high tides, or heavy spring snow melt. Flooding has affected the entire Community in the past, including the airport. Flooding can also compromise utilities and septic systems, and can spread pollution from contaminated sites.
Landslide	Yes	Mud slides occur during spring thaw and cover the road, which separates the Community. Large rocks fall without warning almost every year. This damages the roads and poses a risk to residents.
Severe Wind	Yes	Strong wind storms occur in the Community. These storms can damage roofs, blow over tall communication towers and trees, potentially leading to loss of power or cell and landline service.
Severe Winter Weather	Yes	Severe winter weather can affect plane access to the Community for travel, food and supplies, and medical emergency evacuations. Snow storms can also cause power outages, and some damage to structures..

Table 5-5 (Continued): Significant Hazards in the Planning Area

Hazard	Significant (Yes/No)	Explanation
Subsidence	No	The Community has noticed small potholes, but not to an extent they are concerced about.
Tsunami	Yes	The Community is located on Anchorage Bay and recieves tsunami warnings about once a year. They have not yet experienced an actual tsunami.
Volcano	Yes	The Community is near Mt. Veniaminof, which could deposit ash in the Community. There are also a number of active volcanos along the Alaska Peninsula and disrupt flights to the Community. The corrosive properties of volcanic ash are harmful to equipment and detrimental to human health.
Wildfire	Yes	There have been 2 fires within roughly 25 miles of the Community since 1992, totaling 2,480 acres. Wildfires can destroy structures and subsistence resources, and is a severe risk to human life.

The following sections examine each hazard identified by the Tribe that could impact the planning area. This examination includes a general description of each hazard, its anticipated location, anticipated extent, history of occurrences in the planning area, and the probability of future occurrences.

Some hazards, such as tornadoes, could occur in the planning area, but with such infrequency that they were not considered for this evaluation.

5.1.1 Avalanche

An avalanche is the movement of snow and debris down a slope by force of gravity. Avalanches occur when the stability of the slope changes from stable to unstable. This can be caused by storms, earthquakes, volcanic eruptions, rapid temperature changes, and other human activities. Steep slopes and long slopes have a higher probability to slide. Avalanches cause infrastructure and property damage, environmental disturbance, and possible injuries and fatalities.

5.1.1.1 Location

Avalanches can occur in the Community almost anywhere, since it is surrounded by steep topography. However, areas most at risk are the areas between the two sides of the Community as shown in Figures 1 and 2.

5.1.1.2 Extent

Avalanches occur on the mountains surrounding the Community. The areas above the road sections that connect the two sides of the Community have long, steep slopes. This is dangerous for residents should they be in the area when an avalanche occurs. Critical infrastructure is located on both sides. When avalanches occur it cuts off access to critical infrastructure for residents on opposite sides of the avalanche.

5.1.1.3 History of Occurrences

Residents in the Community recalled the following experiences with Avalanches:

- In 2000, the road between the two sides of the Community was not accessible for about 2 weeks. This cut off access to the airport from the main side of the Community.
- In 2013, the city fuel tanks we are at risk of being damaged due to an avalanche. This would have shut down the generators.

5.1.1.4 Probability of Future Events

Avalanches will continue to have an impact on the Community.

5.1.2 Earthquake

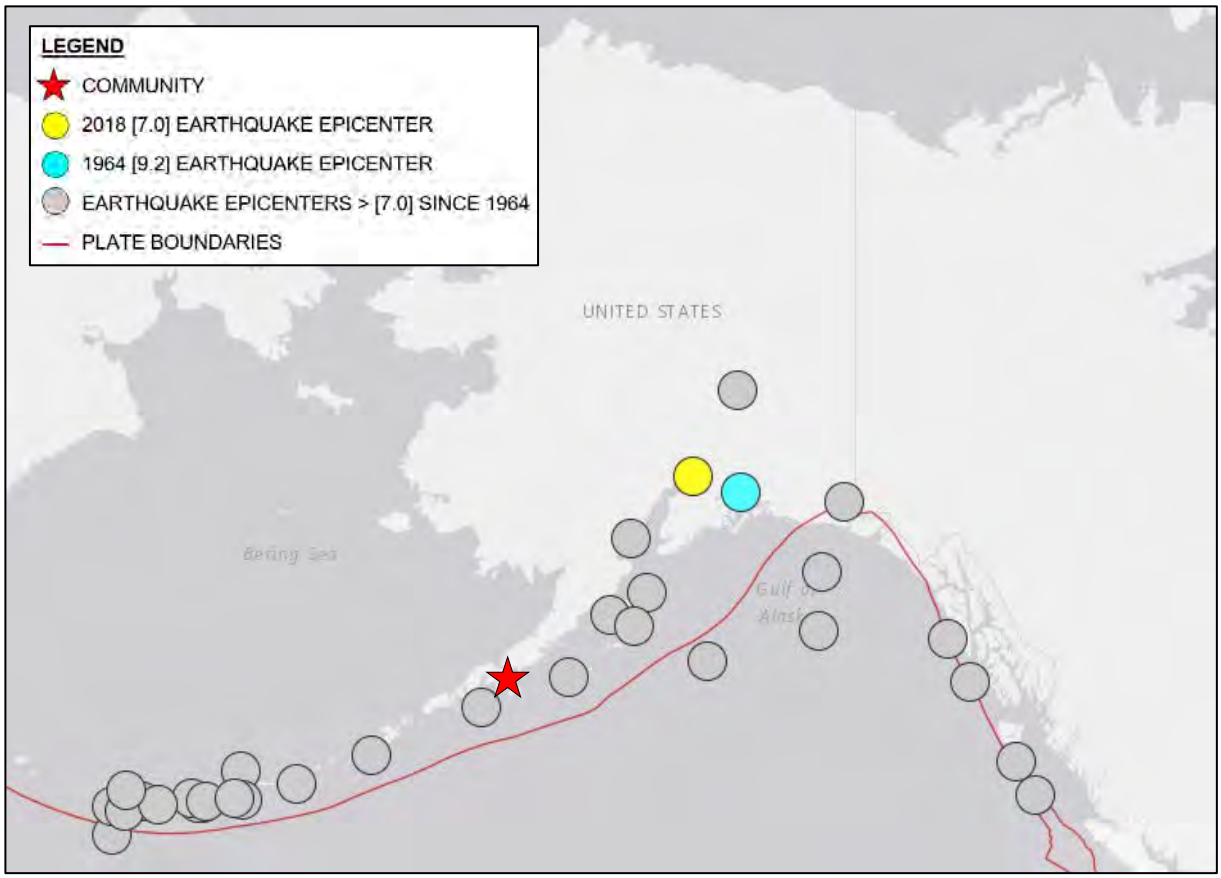
An earthquake is a sudden trembling or movement in the earth's crust due to a sudden release of energy along the edge of the earth's tectonic plates. Earthquakes typically occur without warning. The effects of an earthquake can be felt far beyond the site of its epicenter. The epicenter is the point on the earth's surface that is vertically above the point in the crust where the seismic movement begins. A seismometer detects the vibrations caused by an earthquake and plots them on a seismograph. The magnitude of an earthquake is measured using the Richter scale. Most earthquake-related deaths and property damage are caused by the collapse and failure of structures due to ground shaking. The amount of damage depends upon the duration and extent of the shaking.

Landslides, liquefaction, and tsunamis are some other damaging effects of an earthquake. Earthquake-induced landslides are the down-slope movement of rock, soil and other debris due to ground movement on a steep mountain or hillside slope. Liquefaction occurs when saturated, unconsolidated sand or soil is disturbed due to the shaking from an earthquake. This shaking causes ordinarily solid material or soils to behave like a liquid. A tsunami is a series of enormous ocean waves that can damage or destroy buildings and infrastructure and cause flooding.

5.1.2.1 Location

An earthquake above a 7.0 on the Richter scale is considered a major earthquake. The epicenters of all major earthquakes occurring in Alaska since 1964 are shown on Exhibit 5-2. This map was developed using the US Geological Survey (USGS) Earthquake Catalog Search feature (USGS, 2018). The Community is located approximately 512 miles southwest of the 1964 earthquake epicenter, the largest recorded earthquake in Alaska. The Community is not located on any mapped fault lines. The largest earthquake that has occurred within a 75 miles radius of the Community was a magnitude 6.4 on the Richter scale, located 33.2 miles away on the Alaska Peninsula in March 1972. The closest earthquake to occur near the Community above a magnitude 2.5 was a magnitude 2.8 earthquake that occurred 1.7 miles away in June 2006 (USGS, 2018). More historic earthquakes information surrounding the community is provided in Section 5.1.2.3.

Exhibit 5-2: Major Earthquakes in Alaska



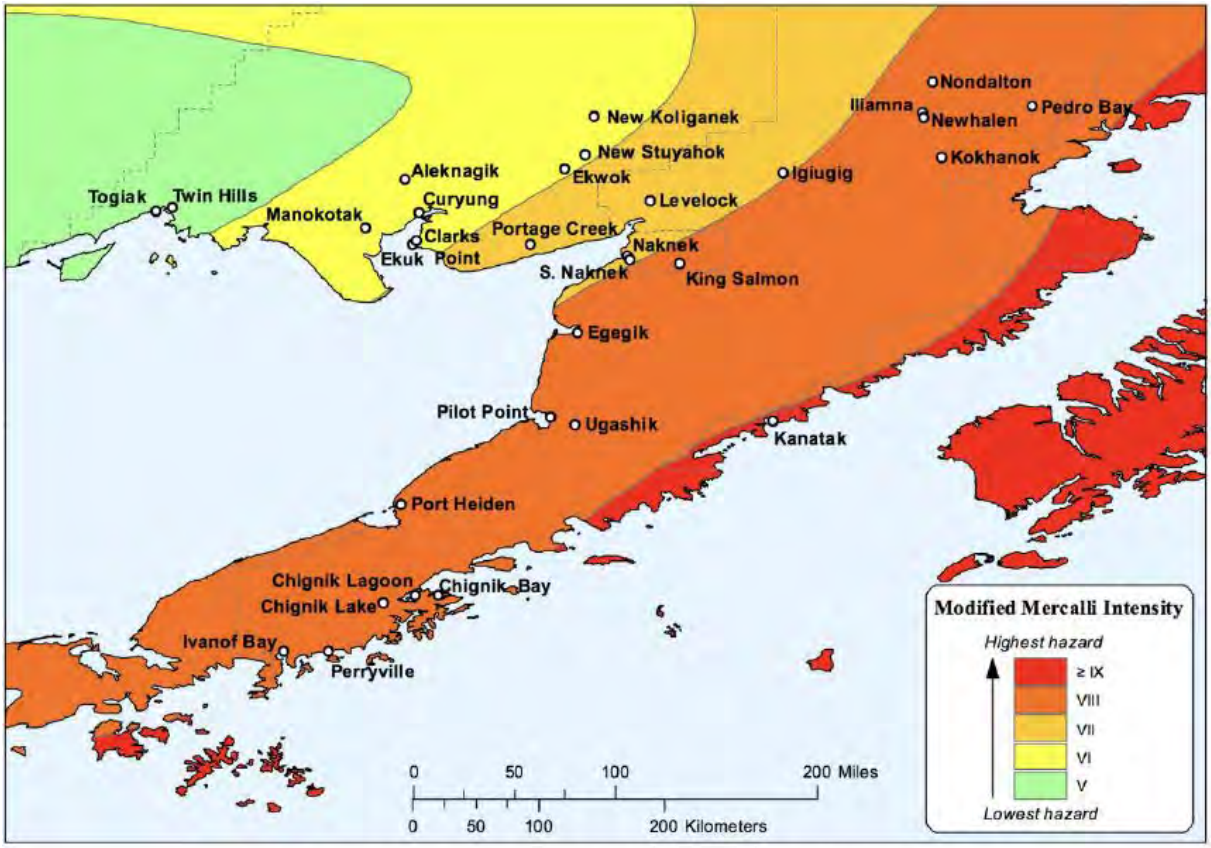
5.1.2.2 Extent

Earthquakes are felt in the Community. Community members have reportedly felt tremors from major earthquakes in Alaska. These earthquakes have caused items to fall off walls of

homes and public buildings in the Community. The most severe earthquake felt in the Community was the Great Alaska Earthquake of 1964. This earthquake had a recorded magnitude of 9.2 on the Richter scale, making it the second largest recorded earthquake in the world. Its effects were felt as far away as South Africa (Alaska Earthquake Center, 2018).

The Geological Hazards Team of the USGS National Earthquake Information Center in Golden, Colorado created a time-independent probabilistic seismic hazard map for the Bristol Bay Region of Alaska. The map (Exhibit 5-3) depicts the intensity of potential earthquake ground shaking that has a 2% chance of occurring in 50 years, presented in terms of the Modified Mercalli Scale (MM) and based on peak ground acceleration. The Community is located in a Zone VIII MM Intensity, indicating the earthquake risk is very high (Natalia Ruppert, Presentation, November 22, 2016). Exhibit 5-4 provides a description of damages that can occur at each magnitude of the MM. This exhibit also provides an approximate Richter Scale equivalent for each MM intensity (USGS, 2019 and SMS Tsunami Warning, 2018).

Exhibit 5-3: Bristol Bay Earthquake Hazard Map



USGS map showing the intensity of potential earthquake ground shaking that has a 2% chance of occurring in 50 years, site class B
(based on peak ground acceleration)

Exhibit 5-4: Modified Mercalli Intensity Scale with Approximate Richter Scale Equivalent

MM Intensity	Richter Scale (approximate)	People's Reaction	Furnishings	Built Environment	Natural Environment
I	1-2	Not felt			Changes in level and clarity of well water are occastionally associated with great earthquakes at distances beyond which the earhtquakes felt by people
II	3	Felt by a few	Delicately suspended objects may swing.		
III	3.5	Felt by several; vibration like passing truck.	Hanging objects may swing appreciably.		
IV	4	Felt by many; sensation like heavy body striking building.	Dishes rattle	Walls creak; windows rattle	
V	4.6	Felt by nearly all; frightens a few.	Picutres swing out of place; small objects move; a few objects fall from shelves within the community.	A few instances of craked plaster and cracked windows with the community.	Trees and bushes shaken noticeably.
VI	5	Frightens many; people move unsteadily.	Many objects fall from shelves.	A few instances of fallen plaster, broken windows, and damaged chimneys within the community.	Some fall of tree limbs and tops, isolated rockfalls and landslides, and isolated liquefaction.
VII	5.5	Frightens most; some lose balance.	Heavy furniture overturned.	Damage negligible in buildings of good design and construction, but considerable in some poorly built or badly designed structures; weak chimneys broken at roof line, fall of unbraced parapets.	Tree damage, rockfalls, landslides, and liquefaction are more severe and widespread with increasing intensity.
VIII	6	Many find it difficult to stand	Very heavy furniture moves conspicuously.	Damage slight in buidlings designed to be earthquake resistant, but severe in some poorly built structures. Widespread fall of chimneys and monuments.	
IX	6.5	Some forcibly thrown to the ground.		Damage considerable in some buildings designed to be earthquake resistant; buildings shift off foundations if not bolted to them.	
X	7			Most ordinary masonry structures collapse; damage moderate to severe in many buildings designed to be earthquake resistant.	

NOTE: Information in this exhibit is a compilation of information from the USGS Modified Mercalli Scale, and the SMS Tsunami Warning Scale (reference information located in Section 8.0).

Large earthquakes could cause avalanches, landslides, falling rocks, or a tsunami. A large earthquake near the Community could also potentially alter the mineralogy or quality of groundwater. Seismic activity can cause damage to older community structures and utilities. The waterline for the Community runs under bridges and could be damaged.

5.1.2.3 History of Occurrences

The USGS Search Earthquake Catalog was consulted for a history of recorded earthquakes with epicenters within 75 miles of the Community and magnitude of 2.5 or greater since 1964. Table 5-6 shows the top ten data results by distance from the community, Table 5-7 by magnitude and Table 5-8 by date (USGS, 2018).

Table 5-6: Top 10 Historic Earthquake Epicenters Closest to Community

Date	Magnitude	Distance from the Community (miles)	Location
Jun-2006	2.8	1.7	Alaska Peninsula
Jan-1992	3.9	2.3	Alaska Peninsula
Aug-2016	3.6	2.3	97 kilometer (km) NE* of Chernabura Island, Alaska
Oct-2016	2.7	5.8	103 km NE* of Chignik Lake, Alaska
Apr-2016	3.3	6.4	96 km NNE* of Chignik Lake, Alaska
Jan-1998	3.5	6.5	Alaska Peninsula
Mar-2018	2.6	7.1	62 km ESE* of Chignik Lake, Alaska
Sep-2013	2.9	8.0	100 km E* of Chignik Lake, Alaska
Apr-2016	2.5	9.5	114 km NE* of Chignik Lake, Alaska
Apr-2016	2.6	10.0	94 km NE* of Chignik Lake, Alaska

*Northeast (NE), North Northeast (NNE), East Southeast (ESE), East (E),

Table 5-7: Top 10 Greatest Magnitude Historic Earthquakes near Community

Date	Magnitude	Distance from the Community (miles)	Location
Mar-1972	6.4	33.2	Alaska Peninsula
Jan-1963	6.4	37.8	Alaska Peninsula
Apr-2016	5.9	49.7	98 km NNE* of Chignik Lake, Alaska
Feb-1972	5.8	43.5	Alaska Peninsula
May-2016	5.7	24.0	95 km NE* of Chernabura Island, Alaska
Jan-2004	5.6	20.4	Alaska Peninsula
Dec-2000	5.6	27.5	Alaska Peninsula
Dec-2004	5.3	21.7	Alaska Peninsula
Nov-2016	5.2	32.2	112 km NE* of Chignik Lake, Alaska
Aug-2016	5.1	36.9	55 km SSE* of Chignik Lake, Alaska

* North Northeast (NNE), Northeast (NE), South Southeast (SSE)

Table 5-8: Top 10 Most Recent Historic Earthquakes near Community

Date	Magnitude	Distance from the Community (miles)	Location
Dec-2018	2.7	49.3	108 km NNE* of Chignik Lake
Nov-2018	3.6	41.4	93 km ESE* of Chignik Lake
Nov-2018	2.9	44.7	67 km S* of Chignik Lake
Oct-2018	3.1	48.5	80 km WNW* of Chirikof Island
Oct-2018	2.6	34.2	94 km NE* of Chernabura Island
Aug-2018	2.7	23.6	77 km NE* of Chernabura Island
Aug-2018	2.9	42.7	13 km E* of Chignik Lake
Aug-2018	3.0	45.2	98 km NE* of Chernabura Island
Jul-2018	2.9	47.4	62 km ENE* of Sand Point
Jul-2018	2.7	18.2	102 km NNE* of Chignik Lake

* North Northeast (NNE), East Southeast (ESE), South (S), West Northwest (WNW), Northeast (NE), East (E), East Northeast (ENE)

Additionally, residents recalled a 7.6 earthquake in January 2018. The epicenter of this earthquake occurred outside of the 75-mile radius search. Residents stated that items fell off walls with no injuries. Everyone went to higher ground. There is not a shelter, so residents sat in their cars all night. It was winter with cold temperatures, and some residents ran out of gas in their vehicles.

5.1.2.4 Probability of Future Events

It is likely for earthquakes to occur in or near the Community in the future.

5.1.3 Erosion

Erosion is the wearing away, movement, or transportation of land. This can occur along riverbanks, shorelines, dune materials, and beaches. Repetitive flooding events, sea level rise, wave action, subsidence, sediment loss, and climate change can result in long-term erosion. Though most erosion happens gradually over a long period, it can also happen quickly due to periodic natural events such as windstorms, flooding, hurricanes, and storm surges. This can also be intensified by human activities or influences such as the construction of embankment protection structures or water table depletion. Erosion is measured as the rate of change in the displacement or position of the shoreline or riverbank over a given period of time. Erosion does not typically cause death or injury to people; however, it can destroy community infrastructure, buildings, and transportation systems.

5.1.3.1 Location

The Community experiences erosion along the coast of Anchorage Bay and Indian Creek. Significant erosion areas are identified on Figures 1 and 2.

5.1.3.2 Extent

The Community THMP team has classed the area affected by erosion as "extensive." The Community is surrounded by waterfalls. Waterfalls are larger and stronger during spring run-off, fall, and when it rains. Beaches surrounding the Community have dramatically increased due to high tides. The erosion of highest concern is the spring runoff in rivers and creeks eroding through the Community to the point where homes and the community's infrastructure (utilities, roads etc.) are undermined. Many residents' homes, roads, and community infrastructure have been affected every year. Bridges in the Community are being undermined. This puts Community waterlines in danger of damage if the bridge is compromised. Other critical Community assets located near erosion areas include the airport, and the clinic. Because the two parts of the community are connected via a road that has been affected by erosion, access to any asset between the two sides of the Community can be affected.

5.1.3.3 History of Occurrences

Erosion is an on-going process. However, particular events can result in notable occurrences of erosion, such as spring-thaw runoff and high tides. Residents reported a house that has a small creek running under it due to severe rain and erosion issues. The Community is currently working to protect their bridges by placing armor rock along the edges of the supports to stabilize the area.

5.1.3.4 Probability of Future Events

Significant erosion is visible along the riverbanks every year, and along the beaches. It is highly likely for erosion to continue to occur in the Community due to spring breakup, storms, and high tides.

5.1.4 Extreme Cold

Extreme temperatures constitute different conditions in different parts of the country. In colder climate regions such as Alaska, extreme cold events involve temperatures -10°F and below. Extreme cold temperatures can occur after a winter storm or during long durations of storm inactivity. Fatalities and injuries can occur from extreme cold by causing hyperthermia or frostbite (NOAA, NWS, December 2018). Extreme heat events involve temperatures above 80°F. These temperatures are much rarer in Alaska, but are being experienced more frequently due to climate change.

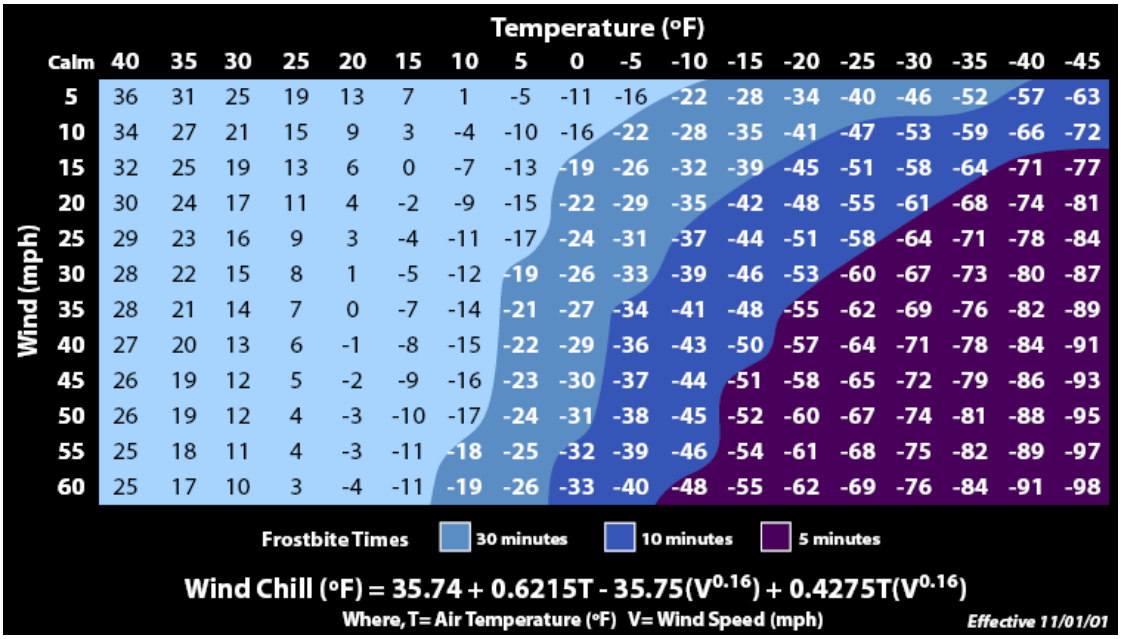
5.1.4.1 Location

Extreme temperatures affect the entire tribal planning area (see Exhibit 5-1).

5.1.4.2 Extent

Extreme cold varies from region to region. For the purpose of this report, extreme cold is being classified as the temperature at which frostbite occurs in 30 minutes, or less. This determination was based on the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) wind chill chart in Exhibit 5-5 (NOAA NWS, 2018).

Exhibit 5-5: Wind Chill Chart



The Community is assumed to experience the same temperatures as Port Moller, which is roughly 87 miles away. Port Moller has experienced temperatures as low as -27°F in 2008 and as high as 78°F in 2015 (Weather Underground, 2018). There are no known fatalities, injuries, or illnesses caused by extreme temperatures in the Community. However, residents are impacted by these events in various ways.

Most residents are aware of the dangers of extreme cold and know how to prepare for winter weather. The Community is most at risk of extreme cold during a power outage or during winter hunting expeditions. Pipes freeze in government and private structures during extreme cold events. These events also make it difficult to get vehicles to run and creates challenges for pumping oil. Extreme cold in the late spring and early summer has the potential to impact plant growth and disrupt subsistence activities.

5.1.4.3 History of Occurrences

Data is not readily available for the Community. However, temperatures have been recorded in the nearby community of Port Moller, which is roughly 87 miles away. These communities experience similar temperatures. Therefore, Table 5-9 identifies historical extreme temperatures recorded in Port Moller (Weather Underground, 2018).

Table 5-9: Historical Extreme Temperature Events

Year	Minimum Temperature (°F)	#of Days Below -10°F
2018	3	0
2017	0	0
2016	19	0
2015	8	0
2014	0	0
2013	0	0
2012	1	0
2011	0	0
2010	0	0
2009	0	0
2008	-27	19

5.1.4.4 Probability of Future Events

It is highly likely that the Community will continue to experience the effects of extreme cold.

5.1.5 Flood

Flooding is the accumulation of water where normally none exists. There are various types of flooding, such as, coastal flooding, riverine flooding, and shallow flooding. Additionally, flooding can occur due to rapid snowmelt, ice jams, heavy rainfall, severe thunderstorms, tropical storms, and other high precipitation events. Flooding can damage buildings, personal property, and infrastructure. It can cause road or bridge closures. It can cause a disruption of services, such as, transportation, or utility services. It can also cause injuries or death.

Flooding events are the most significant threats to ecosystems along river and coastal areas of Alaska. As the water runs over and through the watershed, it picks up and carries contaminants and soil. Everything from leaked motor oil on parking areas, plastic grocery

bags, pesticides, fertilizers, detergents, and sediments; known as non-point source pollutants. Point source discharges are; discharge points, bulk fuel storage and sewage treatment plants, and other regulated known sources or points of pollutant discharges. If untreated, these pollutants wash directly into waterways carried by runoff from rain and snowmelt. These contaminants can infiltrate groundwater and concentrate in streams and rivers and can be carried down the watershed and into the ocean. Non-point source pollution is linked to the creation of large dead-zones (areas with minimal oxygen) in the ocean and threatens the health of the ecosystem.

5.1.5.1 Location

Areas in the Community at risk of flooding are depicted on Figures 1 and 2. FEMA flood maps are not available for the Community. The low-lying areas adjacent to Anchorage Bay have the highest risk. This includes most of the Community due to the high volume of runoff from the surrounding mountains. Additionally, many roads and properties in the Community have poor drainage including the airport runway.

5.1.5.2 Extent

The Community experiences flooding yearly. Flooding occurs due to the high volume of run-off from the surrounding mountains and high tides. Most of the Community is in low-lying areas adjacent to Anchorage Bay and experiences flooding. Heavy rainfall also floods many areas and can maintain standing water for days or weeks. The highest risk is during spring thaw. The Community experiences high tides that come over the bank and flood low lying areas. When the airport runway is saturated, it gets soft and airplanes can't land. When this happens, the only transportation is by boat, which is also dependent upon the conditions in the harbor. When flooding impacts residential homes and other structures, water must be pumped from buildings. Utilities, septic systems, homes, and roads are also at risk.

5.1.5.3 History of Occurrences

In the past, flooding has nearly covered the entire Community. They were unable to get kids to school during this event. As a result, roads have been built up so flooding wouldn't continue to wash out the roads. Residents regularly must pump water out of basements due to flooding. In 2018 the city office had 12 inches of standing water in the building and has left visible water marks.

5.1.5.4 Probability of Future Events

It is highly likely flooding will continue to happen in the Community due to the continuing effects of rain, spring thaw, and high tides.

5.1.6 Landslide

A landslide is the movement of a mass of debris, rock, or earth by force of gravity down a slope. Landslides occur when the stability of the slope changes from stable to unstable. This can be caused by storms, earthquakes, volcanic eruptions, fire, erosion, and other human-induced activities. Steep slopes and long slopes have a higher probability to slide. High soil water content and/or slopes with low vegetative coverage are also likely to slide. Landslides cause infrastructure and property damage, environmental disturbance, and possible injuries and fatalities.

5.1.6.1 Location

Landslides occur in the Community along the steep topography surrounding it (see Figures 1 and 2). The areas mostly at risk are the roads and bridges connecting the two sides of the Community below the cliffs and steep sloping areas.

5.1.6.2 Extent

Landslides occur on the mountains surrounding the Community. The areas above the road sections that connect the two sides of the Community have long, steep slopes. In addition to landslides, large boulders and rocks fall from these steep slopes and pose a threat to residents traveling along this road. Falling boulders or rocks can hit travelers or land on the road causing a road hazard. When landslides occur it cuts off access to critical infrastructure and can wash out the road.

The entire Community is surrounded by areas with steep slopes. Reportedly, large masses of soil and large rocks slough off or topple down onto the road. The road connecting both sides of the Community is most at risk of a landslide. Additionally,

5.1.6.3 History of Occurrences

Residents report that landslides occur at least two times a year due to spring run-off and high rain events. Residents also noted that they use extreme caution on the roads near the steep slopes in the spring. There is a concern for falling boulders.

5.1.6.4 Probability of Future Events

It is anticipated that landslides will continue to have a frequent impact on the Community.

5.1.7 Severe Wind

Severe wind can accompany other natural hazards or occur alone. Wind events pose a threat to vital utilities, lives, and property. Severe winds are classified using the Beaufort Wind

Scale. Strong gale winds of 47 miles per hour (mph) and greater are considered severe and likely to produce damage.

5.1.7.1 Location

Severe wind affects the entire tribal planning area (see Exhibit 5-1).

5.1.7.2 Extent

The Beaufort Wind Scale gives a force scale of 1 – 12 based on sustained wind speed. Exhibit 5-6 identifies the scale and the consequences that are possible at the different levels as well as, the impacts to ocean water movement (NOAA NWS, March 2013). Any wind event, Force 9 and higher is considered severe and can cause damage within the Community.

Exhibit 5-6: Beaufort Wind Scale

The Beaufort Wind Scale

Force	Name	Wind Speed knots	mph	Consequence
0	Calm	0	0	Smoke rises vertically
Wave height: 0 m - **Sea:** Like a mirror				
1	Light air	1-3	1-3	Smoke drifts with air
Wave height: 0.1 m (.25 ft) - **Sea:** Ripples - No foam crests				
2	Light breeze	4-6	4-7	Weather vanes become active
Wave height: 0.2-0.3 m (0.5-1 ft) - **Sea:** Small wavelets - Not breaking				
3	Gentle breeze	7-10	8-12	Leaves and small twigs move
Wave height: 0.6-1 m (2-3 ft) - **Sea:** Small wavelets - Crests begin to break				
4	Moderate breeze	11-16	13-18	Small branches sway
Wave height: 1-1.5 m - **Sea:** Small waves becoming longer, numerous whitecaps.				
5	Fresh breeze	17-21	19-24	Small trees sway - Waves break
Wave height: 2-2.5 m (6-8 ft) - **Sea:** Moderate waves - Many whitecaps				
6	Strong breeze	22-27	25-31	Large branches sway
Wave height: 3-4 m (9.5-13 ft) - **Sea:** Larger waves forming - Whitecaps everywhere				
7	Near gale	28-33	32-38	Whole trees sway - difficult to walk
Wave height: 4-5.5 m (13.5-19 ft) - **Sea:** Sea heaps up - White foam blown around				
8	Gale	34-40	39-46	Twigs break off trees
Wave height: 5.5-7.5 m (18-25 ft) - **Sea:** Edges of crests break into spindrifts				
9	Strong gale	41-47	47-54	Shingles blow off roofs
Wave height: 7-10 m (23-32 ft) - **Sea:** High waves - Sea rolls - Reduced visibility				
10	Storm	48-55	55-63	Trees uprooted - Damage to buildings
Wave height: 9-12.5 m (29-41 ft) - **Sea:** Very high waves with overhanging crests				
11	Violent Storm	56-63	64-73	Widespread damage
Wave height: 11.5-16 m (37-52 ft) - **Sea:** Exceptionally high waves				
12	Hurricane	Over 63	Over 73	Violent destruction
Wave height: 16+ m (52+ ft) - **Sea:** Sea completely white - Excessive foam				

Severe wind can be present all year, but these events are most common during the spring and fall months. These conditions can cause loose debris to blow around the Community and detach roofing or siding from homes and other structures.

Severe wind can cause power poles to blow over and cause power outages, and interrupt communications. When power outages happen during cold temperatures it produces a hazard to residents.

In the winter, severe winds can cause snowdrifts that impact visibility and travel throughout the Community. In the summer and fall months, severe wind conditions produce an unhealthy amount of dust. The airport runway and all the roads in the Community are gravel. This produces large amounts of airborne dust, impacting subsistence harvests and producing a breathing risk to everyone, but especially young children and those with respiratory issues.

Severe wind impacts air transportation in and out of the Community. This increases risks to residents if there is a lack of needed supplies, medications, and mail. This also decreases the ability to evacuate for medical emergencies.

Severe wind can also cause large waves to form and can increase the impacts of flooding, and erosion within the Community.

5.1.7.3 History of Occurrences

According to locals, severe windstorms occur more than once per year. Residents reported that wind speeds of 120 mph and 100 mph, in 2000 and the winter of 2017, respectively. This is not verified due to not having a local weather station. Residents also reported that a roof was blown off a home, and a smoke house was blown to the middle of the road. Also, it was noted that an all-terrain vehicle was seen blowing down the road due to high winds.

Wind data is not readily available for the Community. However, wind speeds have been recorded in the nearby community of Port Moller, which is roughly 87 miles away. Therefore, Table 5-10 identifies historical severe wind events recorded in Port Moller (Weather Underground, 2018).

Table 5-10: Historical Severe Wind Events

Year	Max Wind Speed (mph)	# of Days Above 47 mph
2018	37	0
2017	40	0
2016	38	0
2015	39	0
2014	36	0
2013	47	1
2012	54	1
2011	44	0
2010	45	0
2009	45	0
2008	38	0

5.1.7.4 Probability of Future Events

Severe wind events are highly likely to continue to occur in the Community.

5.1.8 Severe Winter Weather

Severe winter storms can include snow, freezing rain, sleet, or a mix of the previous forms of precipitation. Heavy snowfall occurs when large quantities of snow is produced in a short period of time. Drifting snow creates an uneven distribution of snow caused by strong winds. This weather can cause harm to individuals, cause power outages, cause property damage, and damage utilities.

5.1.8.1 Location

Severe winter weather affects the entire tribal planning area (see Exhibit 5-1).

5.1.8.2 Extent

Air transportation is essential to the Community. Severe winter storm conditions create a hazard for planes to land in the Community. These storms hinder the ability to evacuate for medical emergencies, and receive needed supplies, medications, and mail due to ice or snow on the runway.

Traveling in severe winter conditions is dangerous for residents because of the blowing snow and reduced visibility. This is exacerbated by colder temperatures because of their effect on the snow ratio. Due to the average temperatures in Alaska being lower than the

rest of the United States during winter months, a snow ratio of 1:20 was assumed. This means that for every 1 inch of precipitation, 20 inches of snow falls. With extreme cold, the snow ratio can increase up to 1:50. This 'fluffy' snow is hard to manage because it becomes airborne easily (AccuWeather, 2019). The airport is the top priority for snow removal, but in general it takes roughly 24 man-hours to keep the roads drivable. High snow loads can cause structures to collapse and as a result, put an economic hardship on the Community in order to repair damaged structures.

Power outages can be caused by severe winter storms. If power is not quickly restored, the clinic is at risk of losing essential medications and vaccines that require refrigeration. Young children and community elders are at greater risk of injury during power outages.

Icy conditions throughout the Community can present a hazard for all residents. Vehicles are at risk of sliding off the roads if the roads are not cleared of snow and ice. Walking residents are at risk of falling and injuring themselves. Walking residents share the road with vehicles and large equipment. This causes a risk to pedestrians walking in the Community.

5.1.8.3 History of Occurrences

Precipitation data is not readily available for the Community. However, precipitation has been recorded in the nearby community of Port Moller, which is roughly 87 miles away. These communities experience similar amounts of precipitation. Table 5-11 identifies historical severe winter weather events recorded in Port Moller between the months of November and March. Precipitation data was not available between 2008 and 2012 (Weather Underground, 2018).

Table 5-11: Historical Severe Winter Weather Events

Year	Maximum One Day Precipitation (inches)	# of Days Above 1.0 inch
2018	2.11	5
2017	3.28	7
2016	1.84	3
2015	3.84	12
2014	6.42	27
2013	4.49	9
2012	0.55	0

Additionally, residents in the Community provided the following accounts of severe winter weather:

- The whole cannery collapsed in 2012 due to high snow loads. It continues to negatively impact on the Community economy.
- In 2011 they had snow drifts up to the roofs of some resident's homes

5.1.8.4 Probability of Future Events

Severe winter weather will likely continue to occur and impact the Community. They report either large quantities of snow, or large quantities of rain. This varies from year to year.

5.1.9 Tsunami

A tsunami is a series of large waves created by disturbances that take place undersea, such as a volcanic eruption or earthquake. These waves are powerful and can travel many miles over open sea and can potentially cause devastating damage to shorelines. These powerful waves can result in flooding, can cause severe property damage, and cause injuries and deaths.

5.1.9.1 Location

Tsunamis affects the entire tribal planning area (see Exhibit 5-1).

5.1.9.2 Extent

Tsunamis have not had an impact on the Community to this point. However, should a tsunami occur in the Community, it would have an extreme impact. Exhibit 5-7 portrays the maximum estimated tsunami inundation map for the Community created by the Alaska Division of Geological & Geophysical Surveys (Nicolsky, Suleimani, & Koehler, 2016). It shows that the main portion of the village could be covered by up to 100 feet of water. It also shows that the remainder of the Community could be impacted by about 80 feet of water from a tsunami.

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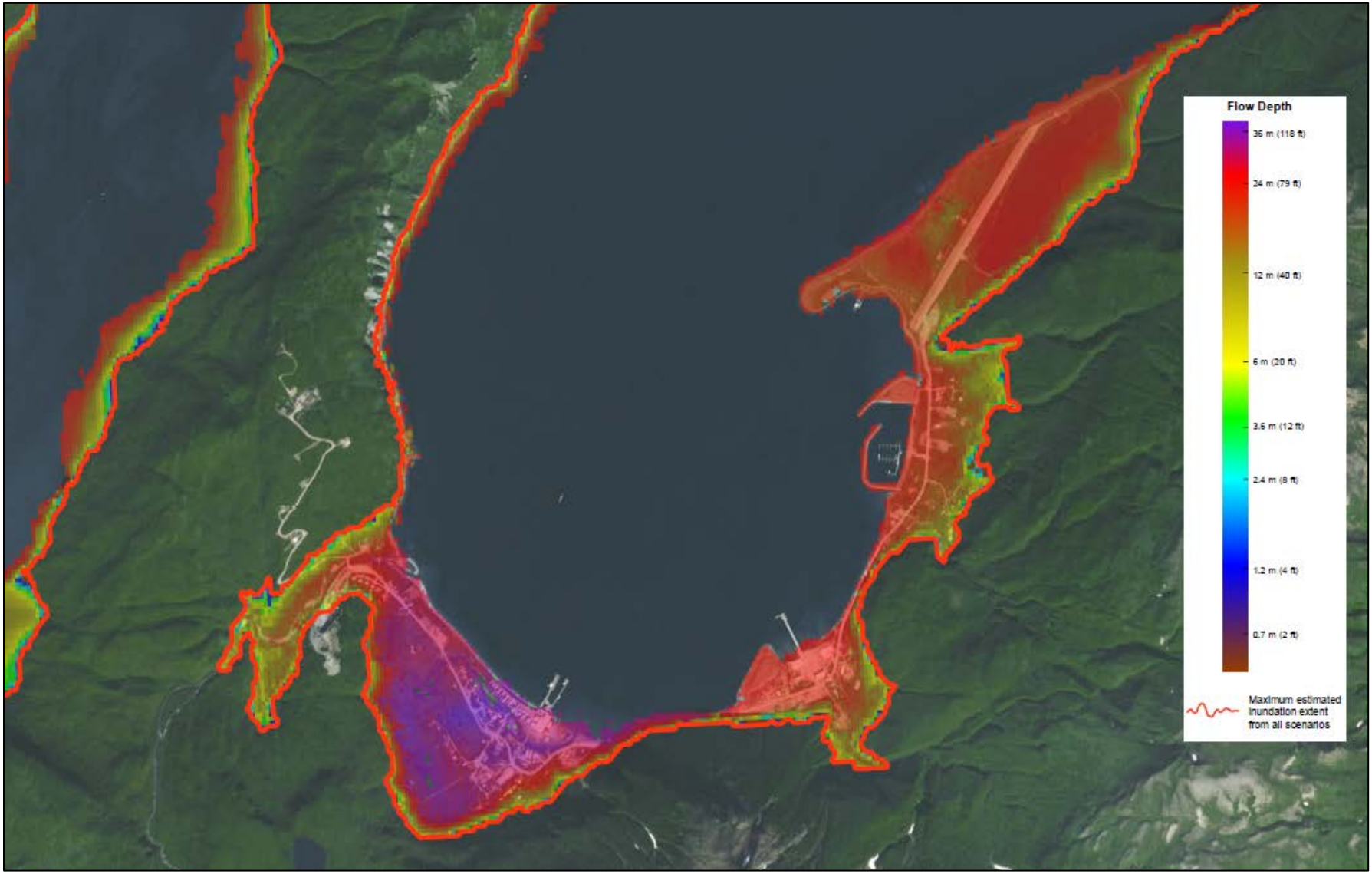
Exhibit 5-7: Maximum Estimated Tsunami Inundation, Chignik Bay, Alaska



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5.1.9.3 History of Occurrences

No tsunamis have occurred in the Community. However, residents stated that they receive tsunami warnings for the Community almost once a year. They receive texts and calls warning residents to get to higher ground until the threat subsides.

5.1.9.4 Probability of Future Events

Tsunamis have a high probability of affecting the Community.

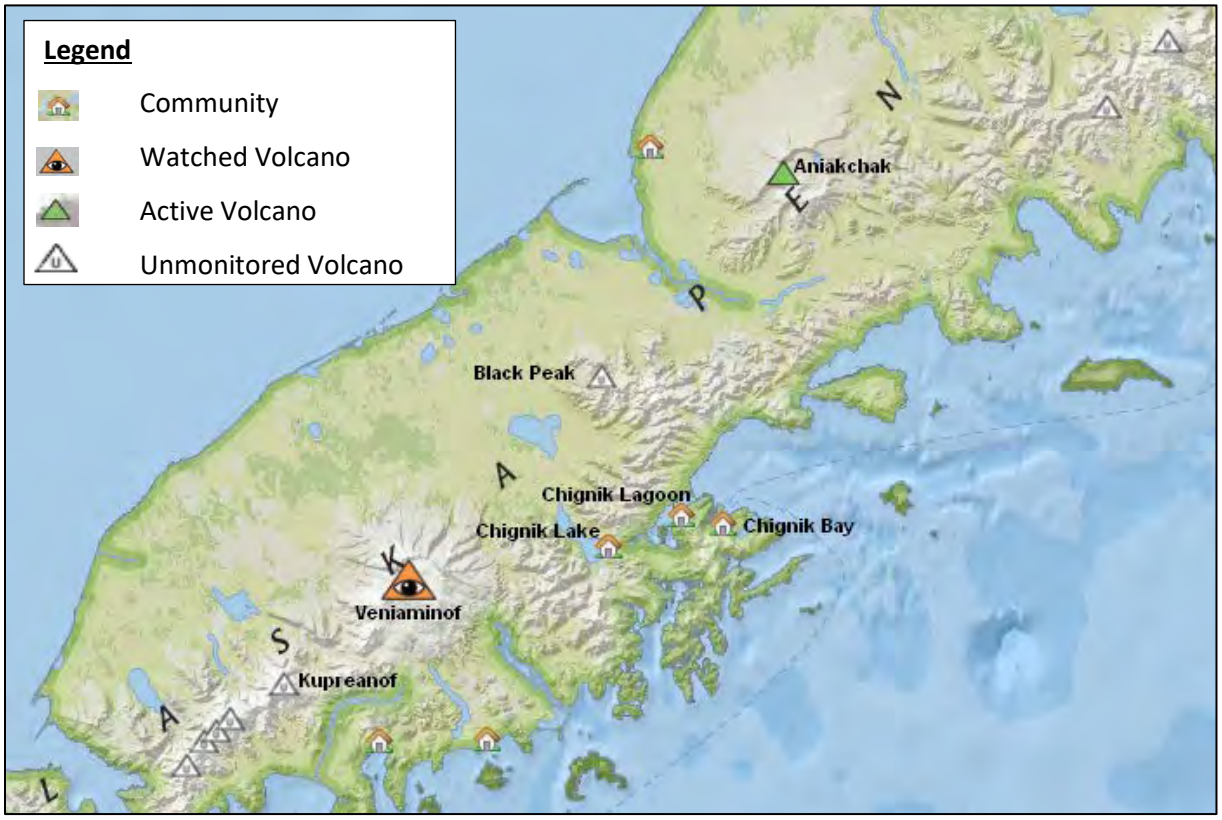
5.1.10 Volcano

A volcano is a typically conical shaped mountain or hill that has a crater or vent. Lava, rock fragments, gases, and hot vapors erupt from the earth's core through the crater or vent. Volcanos are generally found where tectonic plates are diverging or converging. Erupting volcanos can pose hazards to those in the immediate area of the eruption or outside of the area for many miles. A volcano produces volcanic ash when it erupts. This can impact aircraft and vehicle transportation. It can also cause injury to people as it impacts air quality. Breathing volcanic ash can damage the lungs and cause breathing issues.

5.1.10.1 Location

The entire planning area is at risk when ash fall enters the area (see Exhibit 5-1). There are three historically active volcanos within 100 miles of the Community: Veniaminof and Aniakchak at approximately 40 miles, and Kupreanof at approximately 60 miles from the Community. Exhibit 5-8 identifies some of the volcanos that could impact the Community with ash fall.

Exhibit 5-8: Volcanos Near Community



5.1.10.2 Extent

Volcanic ash is the primary concern for the Community for various reasons. Ash fall produces poor air quality and is a health risk to people with respiratory issues. Ash fall also creates a hazard to equipment, generators, vehicles, or anything with a motor. Volcanic ash is corrosive and can damage machinery. In rural Alaska, it can be challenging to replace equipment due to limited local resources, and delivery access to the Community. The Community relies upon air transportation for supplies, mail, and medical emergencies. Volcanic ash may or may not fall on the Community depending on the wind direction from the source. However, it can still have an impact if it is in the flight path of the aircraft.

5.1.10.3 History of Occurrences

Mount Veniaminof is approximately 40 miles from the Community. This volcano has been historically active and is being monitored by the Alaska Volcano Observatory. Veniaminof is one of the largest and most active volcanic centers in the Aleutian Arc and has erupted at least 13 times in the past 200 years. Recent significant eruptions of the volcano occurred in 1993-95, 2005, and 2013. Residents in the Community recall a light dusting of ash from the 2013 eruption. During the 1993-95 activity, a small lava flow was extruded, and in 2013, five small lava flows effused from the intracaldera cone over about five months. Minor ash-

producing explosions occurred nearly annually between 2002 and 2010. Previous historical eruptions have produced ash plumes that reached 20,000 feet above sea level in 1939 and 1956, and ash fallout that blanketed areas within about 25 miles of the volcano in 1939 (Alaska Volcano Observatory, 2018).

5.1.10.4 Probability of Future Events

Volcanic eruptions are challenging to predict, and ash fall impacts are dependent on wind patterns. However, volcanos are likely to continue to have an impact on the Community as there are several volcanoes nearby.

5.1.11 Wildfire

A wildfire spreads through the consumption of vegetation. It typically occurs in areas with abundant vegetation. It often begins unnoticed and spreads quickly. It produces dense smoke that can be seen for many miles. Wildfires can result in damage to property, subsistence areas, and loss of life. The smoke produced from wildfires can prohibit air transportation in and out of a community, and reduces air quality.

Fuel, weather, and topography contribute to the behavior of the wildfire (Idaho Firewise, 2018):

- Wildfire fuel includes structures and vegetation. Dense, large areas burn for a longer duration and creates large amounts of heat. Less dense and dry areas burn quickly with less heat.
- Weather that can affect a wildfire includes wind, moisture, temperature, cloudiness, and air pressure. Wind moves the wildfire across the landscape and provides oxygen which can make the fire grow quickly. It can also cause embers to blow to new areas potentially causing new fire locations. Low humidity and high temperatures can cause the vegetation to become dry. High humidity and rain can extinguish or slow the fire down.
- Topography, or physical features, including aspect and slope of an area, can contribute to the behavior of a wildfire. Wildfires burn more rapidly moving up a slope because it preheats the fuels which makes them more combustible. Also, south and west facing slopes have drier fuels due to more exposure to the sun.

5.1.11.1 Location

Wildfires have an impact on the entire tribal planning area (see Exhibit 5-1) due to the impacts of smoke and subsistence resources. A map of wildfires located in and around the Community is provided in Exhibit 5-9.

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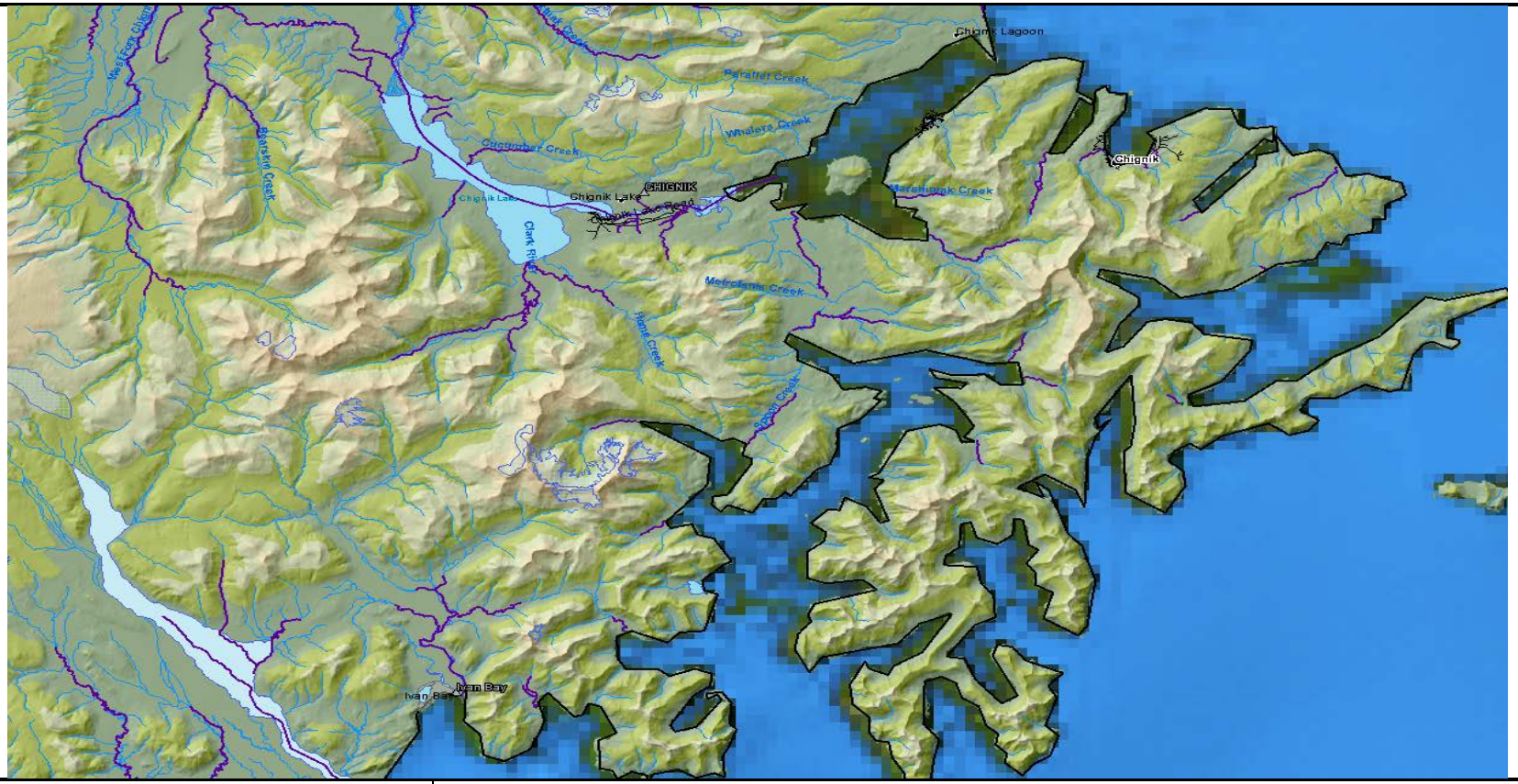
Exhibit 5-9: Chignik Bay Fire Map



Source: (Alaska Interagency Coordination Center, 2018)

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5.1.11.2 Extent

Subsistence areas around the Community provide needed food sources for residents. Wildfires can damage these areas and the resources they provide, such as berries, greens, and wildlife.

Smoke from wildfires produce poor air quality. It is hazardous to residents and pets, especially the elders, young children, and those with respiratory issues. Smoke from wildfires can also have a negative impact on subsistence harvests, specifically fish in smoke houses and in drying racks. This is an issue because residents throughout the Community rely upon these harvests to sustain themselves through the winter months.

Nearby wildfires are a concern for the Community because they lack the ability to fight a fire if one were to occur.

5.1.11.3 History of Occurrences

Table 5-12 below provides a list of wildfires and their impacts (in acreage) in or around the Community (Alaska Interagency Coordination Center, 2018). Additionally, according to residents, a dump fire occurred about 20 years ago, and about four or five years ago there was a fire ban because of the dry season and concern for fires.

Table 5-12: History of Wildfires

Fire Name	Year	Estimated Impact (Acres)	Distance from the Community (Miles)
Yantarni	1992	880	61.4
Ivan Bay	1992	210	25.3
Chignik	1996	80	12.8
Meshik River	2006	1310	34.6

5.1.11.4 Probability of Future Events

Wildfires are likely to affect the Community. The Community is noticing drier and hotter seasons with more lightning. These conditions cause the vegetation to become drier, and more susceptible to fires. These same conditions are becoming more common throughout Alaska which also increases the risk of smoke from distant wildfires being blown into the Community.

5.2 COMMUNITY ASSETS

The Planning Team determined the potential impacts of natural hazards to the Community assets. Assets are broadly defined as anything that is important to the Community such as the people, the economy, and the natural and built environments of the Community. Some assets are more vulnerable to these hazards because of their socioeconomic uses and physical characteristics.

5.2.1 People

The most important asset to the Community is the people. The 2017 DCCED certified population was 110. Residents are not always in their homes. The following list provides the main places that people are in large numbers during the day when not in their place of residence.

- School / Gym
- City Office
- Chignik Bay Tribal Council Building
- Our Store
- Tides Out (Store)
- Harris Sub-Regional Clinic

5.2.2 Economy

The local economy is important to understand when planning to reduce the impacts of hazards. Economic resiliency influences recovery after a natural disaster. The following is a list of economic resources that could be affected and pose a severe impact on the Community should a hazard impact the Community.

- Our Store
- Tides Out (Store)
- Chignik Bay Adventures B&B
- Farwest Bunkhouse/Duplex/Restaurant/2-Story Apartment and Office
- Chignik Variety Store
- Trident Buildings
- City Tank Farm

5.2.3 Built Environment

Existing infrastructure and structures are another important asset to the Community. The following is a list of important infrastructure, existing structures, and critical facilities in the community.

- Critical Facilities/Existing Structures
  - City office
  - Our Store
  - Tides Out (Store)
  - Chignik Bay Tribal Council Building
  - Chignik Bay Adventures B&B
  - Chignik Bakery
  - Farwest Bunkhouse/Duplex/Restaurant /2-Story Apartment and Office
  - Chignik Variety Store
  - Post Office
  - School / Gym
  - Teacher Housing
  - City Maintenance Building
  - City Shop/Equipment
  - Public Safety Apartment / Office / Equipment
  - Community Hall
  - Trident Buildings
  - Subsistence Building
  - Harris Sub-regional Clinic
  - Harbor Master Building
  - Ocean Beauty (Cannery Storage)
  - Airport Maintenance Building
  - Bible Chapel
  - Storage Unit
  - Cemetery 1 & 2
  - Fishing Gear Storage
  - Tsunami Shelter
- Infrastructure
  - Bridges (4)
  - School Generator
  - Sewage Lagoon
  - Water Treatment Plant (West Side)
  - Old Generator Shack
  - Firehall/First Responder Equipment
  - Trident Tank Farm
  - Trident Boat Yard
  - Generator Shack (City)
  - City Tank Farm
  - Tribally Owned Equipment
  - Boat Harbor
  - Water Treatment Plant (East Side)
  - Water Storage Tank (East)
  - Airport Runway

- Barge / Boat Landing
- Chignik International Airport
- Water Storage Tank (West)
- Landfill
- AWAS Station
- GCI Satellites/Building
- ACS Satellites / Building
- Tsunami Siren
- Roads
- Overhead Power/Phone
- Underground Water/Sewer
- Tribal Shop/Equipment
- Hydro Dam
- Water Trestle

5.2.4 Natural Environment

Natural resources and environmental assets are also important to the Community. These resources are important to the Community's quality of life and identity.

- Anchorage Bay
- Humes Creek
- Tina's Creek
- Subsistence areas (hunting and a berry picking areas)
- Indian Creek
- Debbie's Creek
- Recreational Lake (Airport Lake)

5.3 RISK ANALYSIS

The risk analysis assesses the potential effects of the identified hazards on the vulnerable assets that have been identified. Table 5-13 provides a list of the identified assets with the Community. It provides a monetary value, if applicable, to the asset as well as the number of occupants that could be affected should a natural hazard impact the asset. Each asset was evaluated for each identified hazard. If the hazard posed a significant risk to the asset an "X" was placed in the corresponding "Hazard Impact" column in Table 5-13. This information helped the Planning Team determine where the Community is most vulnerable and further helped in the identification of mitigation goals and actions.

The Planning Team used a combination of historical, exposure, and scenario analysis to determine the impact each hazard could have on the Community assets. They used historical analysis by reviewing the frequency and impact on the Community of the hazard in the past. Exposure analysis was used by evaluating the existing assets in the area where the hazard is likely to occur or has occurred in the past. Additionally, they used Community plans to identify future assets that may be affected by the hazard. The Planning Team used scenario analysis by asking "what if" questions about the hazard and made predictions of how the hazard would impact the Community assets should a hazard occur.

Table 5-13: Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Government	1	City office	2	56°17'57.50"N, 158°24'41.92"W	$1.2M	X	X	X	X		X	X	X	X	X	X
	4	Chignik Bay Tribal Council Building	2	56°17'57.50"N, 158°24'41.92"W	$1.2M		X	X	X	X		X	X	X	X	X
	6	City Storage Trailers	N/A	56°17'53.14"N, 158°24'35.79"W	Unknown		X	X	X	X		X	X	X	X	X
	11	Post Office	1	56°17'37.37"N, 158°24'21.86"W	$450K		X		X		X	X	X	X	X	X
	20	City Shop/ Equipment	6	56°17'34.77"N, 158°24'24.32"W	$250K	X	X		X			X	X	X	X	X
	21	Public Safety Apartment / Office / Equipment	1	56°17'35.60"N, 158°24'27.56"W	$660K	X	X		X			X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Transportation	7	Bridges (4)	N/A	56°17'36.96"N, 158°24'10.04"W 56°17'37.88"N, 158°24'15.46"W 56°17'41.45"N, 158°24'18.99"W 56°18'2.14"N, 158°24'54.99"W	$1.5M		X	X	X	X		X	X	X	X	X
	29	Trident Boat Yard	N/A	56°17'39.72"N, 158°24'9.63"W	Unknown		X	X	X	X	X	X	X	X	X	X
	38	Trident Trailer 1	2	56°17'42.53"N, 158°23'3.11"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	39	Trident Trailer 2	1	56°17'44.84"N, 158°22'59.24"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	42	Boat Harbor	N/A	56°18'11.74"N, 158°22'47.37"W	$3.2M	X	X	X	X	X	X	X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Transportation (Continued)	47	Airport Runway	N/A	56°18'38.85"N, 158°22'26.56"W	$30M (Combined w/ Maint. Bldg)	X	X	X	X	X	X	X	X	X	X	X
	48	Barge / Boat Landing	N/A	56°18'32.89"N, 158°22'50.82"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	49	Barge/ Boat Landing	N/A	56°17'41.54", 158°23'33.44"W	Unknown	X	X	X	X		X	X	X	X	X	X
	51	Chignik International Airport	1	56°18'27.84"N, 158°22'34.65"W	$125K	X	X	X	X		X	X	X	X	X	X
	69	Roads	N/A	35.7 Miles Official NTTFI	$71.4M	X	X	X	X	X	X	X	X	X	X	X
	75	Hydro Road	N/A	56°17'44.72"N, 158°24'54.41"W	$1M		X	X	X	X		X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Educational	12	School / Gym	20	56°17'34.11"N, 158°24'20.42"W	$2M	X	X		X		X	X	X	X	X	X
	13	Teacher Housing	7	56°17'35.32"N, 158°24'20.97"W	$1M	X	X		X		X	X	X	X	X	X
	14	School Generator	1	56°17'33.78"N, 158°24'23.38"W	$1.2M	X	X		X	X	X	X	X	X	X	X
Medical	40	Harris Sub Regional Clinic	6	56°18'5.10"N, 158°22'45.20"W	$3M	X	X	X	X	X	X	X	X	X	X	X
Community	2	Our Store	2	56°17'58.85"N, 158°24'48.06"W	$350K		X	X	X	X	X	X	X	X	X	X
	3	Tides Out (Store)	1	56°17'57.20"N, 158°24'48.57"W	$75K	X	X	X	X	X	X	X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Community (Continued)	5	Chignik Bay Adventures B&B	2	56°17'55.47"N, 158°24'41.92"W	Unknown		X	X	X	X		X	X	X	X	X
	8	Chignik Bakery	1	56°17'44.61"N, 158°24'26.50"W	$450K		X	X	X	X		X	X	X	X	X
	9	Farwest Bunkhouse/ Duplex/ Restaurant/ Apartment and Office	2	56°17'37.85"N, 158°24'17.21"W	Unknown		X	X	X	X		X	X	X	X	X
	10	Chignik Variety Store	1	56°17'41.24"N, 158°24'23.97"W	$150K		X		X	X		X	X	X	X	X
	18	Firehall/First Responder Equipment	6	56°17'34.08"N, 158°24'25.10"W	$1.5M	X	X		X			X	X	X	X	X
	19	Storage Unit	6	56°17'34.29"N, 158°24'25.63"W	Unknown	X	X		X			X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Community (Continued)	22	Community Hall	1 - 20+	56°17'36.14"N, 158°24'25.57"W	$1.2M	X	X		X			X	X	X	X	X
	23	Trident Support Buildings	10	56°17'40.60"N, 158°24'11.57"W	Unknown		X	X	X	X		X	X	X	X	X
	25	Trident Bunkhouse	7	56°17'42.80"N, 158°24'16.98"W	Unknown		X	X	X	X		X	X	X	X	X
	26	Trident Bunkhouse	6	56°17'42.37"N, 158°24'17.69"W	Unknown		X	X	X	X		X	X	X	X	X
	27	Trident Web Loft	8	56°17'43.32"N, 158°24'18.29"W	Unknown		X	X	X	X		X	X	X	X	X
	32	Subsistence Building	2	56°17'43.97"N, 158°23'15.31"W	$0.5M		X		X			X	X	X	X	X
	33	Trident Office	5	56°17'46.18"N, 158°23'9.90"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	34	Trident Bunkhouse 1	25	56°17'44.71"N, 158°23'4.61"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	35	Trident Bunkhouse 2	15	56°17'47.12"N, 158°23'2.79"W	Unknown	X	X	X	X	X	X	X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Community (Continued)	36	Trident Store	2	56°17'47.87"N, 158°23'3.29"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	37	Trident Bunkhouse 3	10	56°17'43.40"N, 158°23'2.56"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	41	Harbor Master Building	1	56°18'9.98"N, 158°22'40.63"W	$400K	X	X	X	X	X	X	X	X	X	X	X
	45	Ocean Beauty (Cannery Storage)	1	56°18'13.61"N, 158°22'35.42"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	54	Cemetery 1	N/A	56°18'7.27"N, 158°24'45.99"W	--		X	X	X			X	X	X		X
	55	Cemetery 2	N/A	56°17'37.01"N, 158°24'24.56"W	--		X	X	X			X	X	X		X
	57	Bible Chapel	2-20	56°17'43.44"N, 158°24'25.72"W	$350K		X	X	X	X		X	X	X	X	X
	63	Fishing Gear Storage	N/A	56°18'20.82"N, 158°22'38.26"W	Unknown		X	X	X	X		X	X	X	X	X
	64	AWAS Station	1	56°18'34.52"N, 158°22'40.23"W	Unknown	X	X	X	X	X	X	X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Community (Continued)	65	Tsunami Shelter	N/A	56°18'22.44"N, 158°25'8.81"W	$1.8M		X	X	X			X	X	X	X	X
	72	Tribal Shop/Equipment	1	56°17'55.58"N, 158°24'38.33"	Unknown		X	X	X	X		X	X	X	X	X
Utilities	15	Sewage Lagoon	1	56°17'32.58"N, 158°24'28.81"W	Unknown	X	X		X	X	X	X	X	X	X	X
	16	Water Treatment Plant (West Side)	1	56°17'33.09"N, 158°24'26.71"W	Unknown	X	X		X	X	X	X	X	X	X	X
	17	Old Generator Shack / City Maintenance Building	6	56°17'33.97"N, 158°24'24.53"W	Unknown	X	X		X			X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Utilities (Continued)	24	Trident Gas Station	2	56°17'42.47"N, 158°24'16.43"W	Unknown		X	X	X	X		X	X	X	X	X
	28	Trident Tank Farm	1	56°17'38.65"N, 158°24'7.19"W	Unknown		X	X	X	X	X	X	X	X	X	X
	30	Generator Shack (City)	2	56°17'40.02"N, 158°23'24.49"W	$665K		X		X		X	X	X	X	X	X
	31	City Tank Farm	3	56°17'41.81"N, 158°23'19.86"W	$1.7M		X		X		X	X	X	X	X	X
	43	Water Treatment Plant (East Side)	1	56°18'2.71"N, 158°22'32.65"W	$319K	X	X	X	X	X	X	X	X	X	X	X
	44	Water Storage Tank (East)	1	56°18'10.24"N, 158°22'17.63"W	Unknown	X	X	X	X	X	X	X	X	X	X	X
	46	Airport Maintenance Building	1	56°18'29.06"N, 158°22'33.23"W	$30M (Combined w/Runway)	X	X	X	X	X	X	X	X	X	X	X
	52	Water Storage Tank (West)	1	56°18'5.92"N, 158°25'7.23"W	Unknown		X	X	X		X	X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Utilities (Continued)	53	Landfill	2	56°18'24.06"N, 158°25'2.26"W	Unknown		X	X	X	X		X	X	X	X	X
	66	GCI Satellites/ Buidling	1	56°18'5.36"N, 158°24'50.20"W	Unknown	X	X	X	X			X	X	X	X	X
	67	ACS Satellites / Building	1	56°18'5.29"N, 158°24'46.69"W	Unknown	X	X	X	X			X	X	X	X	X
	68	Tsunami Siren	1	56°17'52.47"N, 158°24'31.56"W	$20K		X	X	X	X		X	X	X	X	X
	70	Overhead Power/Phone	N/A	Community Wide	Unknown	X	X	X	X	X	X	X	X	X	X	X
	71	Underground Water/Sewer	N/A	Community Wide	Unknown	X	X	X	X	X	X	X	X	X	X	X
	73	Hydro Dam (Peltin Wheel)	2	56°17'24.22"N, 158°24'55.77"W	Unknown		X	X	X			X	X	X	X	X

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Utilities (Continued)	74	Water Trestle	N/A	56°17'32.60"N, 158°24'34.64"W	$0.5M		X	X	X			X	X	X	X	X
Natural Environment	50	Berry Flats	N/A	56°18'37.17"N, 158°22'43.54"W	--		X	X	X	X	X	X	X	X	X	X
	56	Recreational Lake (Airport Lake)	N/A	56°18'37.35"N, 158°22'19.43"W	--		X	X	X	X		X	X	X	X	
	58	Anchorage Bay	N/A	56°18'1.67"N, 158°24'30.85"W	--		X	X	X	X		X	X	X	X	
	59	Indian Creek	N/A	56°17'57.14"N, 158°25'5.64"W	--		X	X	X	X		X	X	X	X	
	60	Humes Creek	N/A	56°17'48.53"N, 158°23'6.07"W	--		X	X	X	X		X	X	X	X	

Table 5-13 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts										
						Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
Natural Enviroment	61	Debbie's Creek	N/A	56°18'7.42"N, 158°22'47.47"W	--		X	X	X	X		X	X	X	X	
	62	Tina's Creek	N/A	56°18'23.35"N, 158°22'38.84"W	--		X	X	X	X		X	X	X	X	

5.4 VULNERABILITY

The following lists the Community's overall vulnerability to the hazards that affect the planning area, 44 CFR 201.7(c)(2)(ii).

- Avalanche – The Community is surrounded by steep topography. Avalanches endanger residents and community buildings and infrastructure. Access to the airport for the main side of the Community is at risk and at times impacted.
- Earthquakes – The Community is situated in a high-risk earthquake zone. Damage to older community structures and utilities could be caused due to seismic activity. Because of the risk of a tsunami, residents evacuate to higher ground which is lacking a shelter.
- Erosion – Rivers and creeks run through the Community and erode quickly, especially during spring thaw. These channels can damage homes, the clinic, the airport, and other infrastructure. Beach erosion is occurring due to high tides.
- Extreme Temperatures – Very cold temperatures in spring and summer impacts plant growth and disrupts subsistence activities. Pipes freeze in government and private structures during extreme cold events.
- Flood – Structures in the path of watershed channels and in low lying areas are at risk of flood. The whole Community has been flooded in the past due to heavy spring run-off and high tides. Residents have had to pump water from their homes due to flooding. The airport runway is unusable when highly saturated and soft.
- Landslides – The roads between the sides of the Community are surrounded by steep slopes and are at risk of being covered by mudslides. Large rocks fall from the steep terrain surrounding the Community without warning and can cause, injuries, fatalities, or damage community infrastructure.
- Severe Wind – Damage to structures, overhead power lines, and communication infrastructure have occurred due to severe wind speeds. Severe wind speeds have an impact on the delivery of supplies and travel via air transportation.
- Severe Winter Weather – The delivery of supplies is hindered via air transportation due to snow and ice on the runway. Power outages can occur during these events and can impact refrigerated supplies. Large snow loads have collapsed structures in the past.
- Tsunami – The community is situated on Anchorage bay, attached to the greater Bristol Bay and Bering Sea. Being in a high earthquake zone, the chances and severe impact of a possible tsunami are high.

- Volcano – Air quality decreases in the presence of ash and is detrimental to the health of residents and pets. The corrosive properties of the ash are harmful to equipment. Air transportation has stopped due to ash emissions from a volcanic eruption.
- Wildfire – The smoke from nearby wildfires and blown in smoke from distant wildfires decreases the air quality and poses a health risk to residents and pets. Buildings and homes are at risk in case of a wildfire.

6.0 MITIGATION STRATEGY

The following section describes the Community's mitigation strategy. This mitigation strategy will serve as a long-term plan for reducing the potential losses identified in the risk assessment. The THMP discusses the Community's current pre- and post- disaster hazard management plan, and existing and potential funding sources. It also provides the Community's mitigation goals, and actions. Along with these goals and actions this section provides an action plan, a tracking process for the mitigation actions, and a plan to implement these goals and actions into existing planning mechanisms.

6.1 PRE-/POST-DISASTER HAZARD MANAGEMENT

Pre- and post-disaster hazard management programs, policies, and mitigation capabilities of the Community were reviewed, 44 CFR 201.7(c)(3) and 201.7(c)(3)(iv). The Planning Team used this review to identify existing opportunities and challenges of existing capabilities of the Community. This information aided in the determination of mitigation actions for the identified hazards.

The Community is small with limited planning and land management tools. The resources available in the Community are listed below in Table 6-1 and Table 6-2. This THMP provides an opportunity to identify challenges and needs for additional programs and/or policies. It also provides an opportunity to work with other local agencies in the development of appropriate programs and policies.

The Community's planning and regulatory tools are listed in Table 6-1 below. These tools aid in the prevention and reduction of impacts from hazards in the Community.

Table 6-1: Planning and Regulatory Tools

Regulatory Tools (ordinances, codes, plans)	(Yes / No)	Comments
Comprehensive Plan	Yes	2006, developed by the Council, City, and other Community entities.
Land Use Plan	No	--
Wildland Fire Protection Plan	No	--
Emergency Response Plan	Yes	2004, developed by the City
Long Range Transportation Plan	Yes	2006, developed by the Council
Tribal Transportation Safety Plan	No	--
Other Special Plans (e.g., climate change adaptation, coastal zone management)	No	--

Table 6-1 (Continued): Planning and Regulatory Tools

Regulatory Tools (ordinances, codes, plans)	(Yes / No)	Comments
Building Code[1]	No	--
Zoning Ordinances	No	--
Subdivision Ordinances or Regulations	No	--
Other	No	--

[1] New public facilities are designed by licensed professionals using applicable state and federal codes and regulations present at the time of design.

The Community's administrative and technical capabilities are listed in Table 6-2 below. These staff and their skills and tools can be used for mitigation planning and to implement specific mitigation actions.

Table 6-2: Administrative and Technical Capability

Staff / Personnel Resources	(Yes / No)	Department / Agency and Position
Administrator	Yes	Tribe
Environmental Program	Yes	Tribe
Fire Department	Yes	City (Volunteer Fire Department lead by Guy Ashby)
Librarian	Yes	School
Village Public Safety Officer	No	--
Health Aide	Yes	BBAHC
Planner or engineer with knowledge of land development and land management practices	No	The Tribe hires consultants with this knowledge
Engineer or professional trained in construction practices related to buildings and / or infrastructure	No	The Tribe hires consultants with this knowledge
Planner or engineer with an understanding of natural and / or human-caused hazards	No	The Tribe hires consultants with this knowledge
Surveyors	No	The Tribe hires consultants with this knowledge
Floodplain Manager	No	--
Staff with education or expertise to assess the jurisdiction's vulnerability to hazards	No	The Tribe hires consultants with this knowledge

Table 6-2 (Continued): Administrative and Technical Capability

Staff / Personnel Resources	(Yes / No)	Department / Agency and Position
Personnel skilled in Geospatial Information System and / or HAZUS	No	The Tribe hires consultants with this knowledge
Finance (Grant Writers)	Yes	Tribe, City, BBNA[1] (Situation Dependent)

[1] BBNA provides post-disaster grant management staff who can assist the Tribe with grant applications for disaster recovery and long-term recovery plans.

6.2 FUNDING

The following identifies existing and potential funding sources to implement proposed mitigation activities and actions, 44 CFR 201.7(c)(3)(iv) and 201.7(c)(3)(v).

6.2.1 Existing Funding Sources

At the time of the development of the THMP the Tribe has not received or allocated any non-FEMA funds for hazard mitigation actions or projects. However, the Tribe received PDM grant funding for the development of the THMP.

6.2.2 Potential Funding Sources

There are federal, tribal, and private funding sources available to the Tribe for proposed mitigation activities and projects. Sections 6.2.2.1 thru 6.2.2.3 provides a brief list and description of a selection of potential funding sources. In addition to the funding sources listed below other funding sources can be found from the following resources:

- Grants.gov – www.grants.gov is a public website where all federal agency discretionary funding opportunities are posted for grantees to find and apply. Some grant postings close quickly, so it is important to frequently check for potential opportunities.
- Catalog of Federal Resilience Programs for Alaskan Communities – The Denali Commission published a catalog detailing programs that are available to Alaskan communities. A copy of the catalog is located in Appendix D. See Section 8.0 for a web link to the catalog to check for updates (Arctic Executive Steering Committee, 2015).

6.2.2.1 Federal Funds

FEMA provides funding for eligible mitigation planning and projects that protect life and property from future disaster damages and reduces disaster losses. This funding is administered through three programs, the PDM, the Hazard Mitigation Grant Program

(HMGP), and the Flood Mitigation Assistance (FMA) Program. Below is a brief description of each of these funding sources.

Pre-Disaster Mitigation (PDM) Program

The PDM Program is authorized by Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The goal of this programs is to reduce the overall risk to structures and population from future hazard events. Funds from the program provides opportunities to raise public awareness and reduce future losses before disasters occur. PDM provides funds on an annual basis for hazard mitigation planning and projects. This funding is dependent on the amount congress appropriates each year (FEMA, 2018).

Hazard Mitigation Grant Program (HMGP)

HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Following a Presidential Major Disaster Declaration HMGP supports post-disaster cost-effective projects. The purpose of the HMGP is to provide funding for long-term hazard mitigation planning and projects that will reduce the risk of loss of property and life from future disaster. HMGP provides funding up to 75% of mitigation projects. The remaining 25% of the mitigation project funding needs will come from other available funding sources (FEMA, 2018).

Flood Mitigation Assistance (FMA) Program

The FMA Program is authorized by Section 1366 of the National Flood Insurance Act of 1968. The goal of this program is to reduce or eliminate claims made under the National Flood Insurance Program (NFIP). FMA provides funding on an annual basis for planning and projects that reduce or eliminate the risk of flood damage to buildings that are insured under the NFIP. Funding for this program is dependent on the amount congress appropriates each year for this program (FEMA, 2018).

6.2.2.2 Tribal Funds

Tribal funds are available to the Community. One of the Tribal funds available is the Indian General Assistance Program (IGAP). The IGAP provides funding sources to help manage and maintain an environmental office. This office conducts environmental assessments for the Community and helps to prioritize environmental concerns, and educate the public.

6.2.2.3 Private Funds

In general, private funds are not readily available to the Tribe. However, the Tribe could potentially have access to funds through local non-profit organizations and regional corporations.

6.3 MITIGATION GOALS

The findings from the risk assessment were used to develop mitigation goals and actions. The mitigation goals in this THMP are general guidelines that describe Community goals, 44 CFR 201.7(c)(3)(i). These goals are broad, long-term statements that represent the Community's vision for avoiding and reducing losses from the identified hazards. The Planning Team has identified the mitigation goals in Table 6-3.

Table 6-3: Mitigation Goals

Goal Number	Goal Description
1	Build the capacity of the Tribe to prepare, respond to, and recover from disasters.
2	Reduce the possibility of damages due to **avalanches**.
3	Reduce the possibility of damages due to **earthquakes**.
4	Reduce the possibility of damages due to **erosion**.
5	Reduce the possibility of damages due to **extreme cold**.
6	Reduce the possibility of damages due to **floods**.
7	Reduce the possibility of damages due to **landslides**.
8	Reduce the possibility of damages due to **severe wind**.
9	Reduce the possibility of damages due to **severe winter weather**.
10	Reduce the possibility of damages due to **tsunamis**.
11	Reduce the possibility of damages due to **volcanos**.
12	Reduce the possibility of damages due to **wildfires**.

6.4 POTENTIAL MITIGATION ACTIONS

Mitigation actions are specific activities, projects, actions, and processes that aid in achieving the mitigation goals. These actions are used to eliminate or reduce long-term risk to property and people from hazards and their impacts, 44 CFR 201.7(c)(3)(ii). There are four (4) types of mitigation actions that will help reduce long-term vulnerabilities. Mitigation actions fall under the following categories, local plans and regulations, infrastructure and structure projects, natural systems protections, and education and awareness programs. The Planning Team brainstormed and developed a comprehensive list of potential mitigation actions. The full list (Potential Mitigation Actions) is located in Appendix A.

Not all of the identified actions can be implemented in the final action plan. This could be due to a lack of political acceptance, technical feasibility, lack of funding, and other constraints. The Planning Team refined the list of potential mitigation actions (see Appendix A) using the criterion listed below (FEMA, March 2013). These criterion were used to facilitate discussions and to aid in the determination of mitigation actions to be

implemented into the prioritized mitigation action plan (Section 6.5). The underlined and bold action identification (IDs) in the potential mitigation actions list (see Appendix A) were selected by the Planning Team to be implemented in to the action plan. Each of these actions were more thoroughly analyzed using the Mitigation Action Evaluation Worksheet located in Appendix A (FEMA, March 2013).

- Life Safety – Analyzes how effective the action is at preventing injuries and protecting lives.
- Property Protection – Analyzes the significance of the action at eliminating or reducing damage to infrastructure and structures.
- Technical – Analyzes if the action is technically feasible and if it is a long-term solution.
- Political – Analyzes public and political support of the action.
- Legal – Analyzes if the Community has authority to implement the action.
- Environmental – Analyzes the actions impacts on the environment and if it complies with environmental regulations.
- Social – Analyzes the action based on its effect on one or more segments of the population.
- Administrative – Analyzes the Community's personnel and administrative capabilities to implement and maintain action.
- Local Champion – Analyzes the action to determine if there is a strong advocate that will support the action's implementation.
- Other Community Objectives – Analyzes if the action advances other community objectives or plans.

These identified and selected activities represent a comprehensive range that will lessen the need for preparedness or response resources when a natural hazard impacts the Community in the future.

6.5 MITIGATION ACTION PLAN

The actions to be implemented into the mitigation action plan, identified by the Planning Team, were prioritized based on the importance of each item relative to the plan's goals, risks, and capabilities of the Community, 44 CFR 201.7(c)(3)(iii). Table 6-4 provides a prioritized list of mitigation actions, the position, office, department or agency responsible for the implementation of the action, potential funding options, and the timeframe for the action to be implemented. The Mitigation Action Implementation Worksheet (THMP Form 6-1) is included in Appendix E.

Table 6-4: Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
1.A	Acquire and place communication devices on each side of the Community at public locations such as the City office, Tribal office, clinic, and others.	High	City and Tribal Councils	City and Tribal Councils	Federal Aviation Administration; FEMA; BBAHC; City/Tribal Councils	1-2 Years
1.B	Acquire emergency supplies such as food, water, medical supplies, and other needs for the Community.	High	City and Tribal Councils	City and Tribal Councils	BBAHC; FEMA; City/Tribal Councils	1-2 Years
1.C	Update the Community emergency plan and SCERP.	High	City and Tribal Councils	Tribal Administrator/IGAP Coordinator	Tribal Council	Annually
1.D	Post emergency contact numbers for surrounding communities, local entities, and the region around the Community.	High	City and Tribal Councils	City and Tribal Councils	City and Tribal Councils	Annually
1.E	Provide a checklist for emergency kits for personal/family kits.	High	Tribal and City Councils	Tribal and City Councils	N/A	Annually
2.A	Install avalanche warning signs in areas that experience avalanches.	High	State of AK; City and Tribal Councils	State of AK	State of AK	1-2 Years
3.A	Educate residents about securing bookshelves and other items to walls to prevent from toppling during an earthquake.	Medium	City and Tribal Councils	City and Tribal Councils; Lake and Pen (LPSD) School	City and Tribal Councils	1-2 Years

Table 6-4 (Continued): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
3.B	Educate residents about having personal emergency kits for household members.	High	City and Tribal Councils	City and Tribal Councils;LPSD School	City and Tribal Councils	1-2 Years
3.C	Update and/or replace water/sewer distribution infrastructure and associated equipment.	Medium	City of Chignik	City of Chignik	Alaska Native Tribal Health Consortium (ANTHC)	Annually
4.A	Design and construct a seawall, dike, or breakwater as appropriate and acquire needed materials.	Medium	City and Tribal Councils; USACE	USACE	USACE	1-5 Years
4.B	Conduct inspections and repairs as needed on Indian Creek Bridges which is the evacuation route.	High	City and Tribal Councils	City of Chignik and Tribal Council	Bureau of Indian Affairs (BIA)/TTP and City	Annually
4.C	Keep extra culverts available for repairs.	High	City and DOT&PF	City and DOT&PF	DOT&PF; BIA/TTP	Annually
5.A	Provide education for residents on how to install and inspect heat tapes.	Low	City and Tribal Councils	City and Tribal Councils	City and Tribal Councils	Seasonal
5.B	Add chemical to fuel to prevent from gelling.	Low	City and Tribal Councils	City and Tribal Councils	Homeowner or Business	Seasonal
5.C	Educate residents, especially new residents, about hiking safety.	Medium	City and Tribal Councils	City and Tribal Councils; LPSD School; BBAHC	City and Tribal Councils	Seasonal

Table 6-4 (Continued): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
6.A	Build up Anderson Road.	Medium	City	City	City and Tribal BIA/TTP	1-5 Years
6.B	Maintain or improve drainage as needed throughout the Community.	Medium	City	City	City and DOT&PF	Annually
7.A	Install "Falling Rocks" signs around landslide prone areas.	High	DOT&PF	DOT&PF	DOT&PF	1-2 Years
8.A	Move the spare generator to the clinic.	Medium	Tribal/City Council/BBAHC	BBAHC	BBAHC	1 Years
8.B	Maintain and repair power poles when leaning and as need.	High	City of Chignik	City of Chignik	City of Chignik	Annually
8.C	Educate residents about securing roofs and loose debris around their homes.	Medium	City and Tribal Councils	City and Tribal Councils	N/A	Annually
8.E	Educate residents on the importance of having a spare generator and fuel for their homes.	Medium	City and Tribal Councils	City and Tribal Councils	N/A	Annually
8.F	Educate residents on marine safety, particularly about tying up boats, and secureing crab pots.	Low	City and Tribal Councils	City and Tribal Councils	N/A	Annually
9.A	Develop a regular inspection routine for power lines and ensure power lines are secured and not leaning.	Medium	City of Chignik	City of Chignik	City of Chignik	Annually

Table 6-4 (Continued): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
10.A	Build a Tsunami shelter on both sides of the Community.	High	City and Tribal Councils	City and Tribal Councils	FEMA; BIA/TTP; U.S. Department of Housing and Urban Development; Denali Commission	1-5 Years
10.B	Install "Evacuation Route" signs throughout the Community.	High	City and Tribal Councils	DOT&PF; City of Chignik	DOT&PF; City of Chignik	1-2 Years
10.G	Develop a plan to move people to higher ground during natural hazards and acquire a community bus.	High	Tribal and City Councils	Tribal and City Councils	BIA/TTP	1-5 Years
10.H	Schedule and hold regular test tsunami evacuations.	High	City of Chignik; LPSD School	City of Chignik; LPSD School	N/A	Annually
11.A	Supply of masks at the clinic for residents and special masks for residents with respiratory issues.	High	City and Tribal Councils	City and Tribal Councils; BBAHC; ANTHC	City and Tribal Councils; BBAHC; ANTHC	Annually
11.F	Provide education to residents with respiratory issues about the need for special masks.	Medium	BBAHC; Harris Subregional Clinic	Cummunity Health Aides	ANTHC; BBAHC	Annually
11.H	Educate residents of the importance to have prescribed medication accessible.	High	BBAHC; Harris Subregional Clinic	Community Health Aides	BBAHC	Annually
11.I	Provide education on volcanoes and specific associated hazards.	High	Tribal and City Councils; BBAHC	Tribal and City Councils; BBAHC; LPSD School	N/A	Annually

Table 6-4 (Continued): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
12.A	Acquire a brush trimmer attachment and Cut brush throughout the Community.cutting brush (brush cutter – TTP funds)	Medium	Tribal Council	Tribal Council	BIA/TTP	1-2 Years
12.C	Ensure there is a current volunteer firefighter group and that volunteers are trained.	High	City and Tribal Councils	City and Tribal Councils	BBAHC; State of AK/Code Blue	Annually
12.D	Maintain fire equipment and fire hydrants. Update equipment as needed and replace hoses.	High	City Council	City Council	City of Chignik	Annually

[1] Action IDs are not in sequential order. For a full listing of potential mitigation action items see Appendix A.

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6.6 IMPLEMENTING ACTION PLAN INTO OTHER PLANNING MECHANISMS

After the adoption of the THMP by the Council, the Planning Team will work to incorporate the goals and actions of the THMP into other existing Community planning mechanisms, 44 CFR 201.7(c)(4)(iii). The Planning Team will accomplish this by performing the following activities:

- Review community-specific regulatory tools to establish where to incorporate the mitigation philosophy into other plans.
- Work with the community to increase awareness for implementing THMP philosophies and initiatives into other planning mechanisms. Provide assistance with incorporating the mitigation strategy (and Mitigation Action Plan) into relevant planning mechanisms (i.e., Utility Master Plans, Transportation Plans, Comprehensive Plan, Capital Improvement Project List, etc.)
- Update or amend other applicable planning mechanisms as necessary to include the THMP Action Plan.

6.7 REVIEWING PROGRESS GOALS

Tracking the progress of the mitigation actions and goals is important to the THMP, 44 CFR 201.7(c)(4)(ii) and 201.7(c)(4)(v). The Prioritized Mitigation Actions (Table 6-4) provides information pertaining to the tracking process for each mitigation action. It provides the following tracking process information:

- The estimated time to implement each action.
- The department, office, or agency responsible for coordinating and monitoring the implementation of each action;
- The department, office, or agency and their respective roles in implementing each action; and

The Mitigation Action Plan in Section 6.5 provides a description of the planned implementation timeframe for each Mitigation Action. A Mitigation Action Progress Report will be completed annually to monitor the progress of the Mitigation Actions, and any Mitigation Actions that require project closeout. The Mitigation Action Progress Report will address the current status of the mitigation project, any changes made to the project, implementation problems, and appropriate strategies to overcome them. The Mitigation Action Progress Report (THMP Form 6-2) is located in Appendix E.

When FEMA supported projects are completed, the project closeout documents will be prepared by the Tribe. Project closeout may include final invoicing, site inspections, and summary memorandums of the Mitigation Actions.

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7.0 PLAN ASSURANCES AND ADOPTION

This section complies with the requirements of 44 CFR 201.7(c)(5) and 44 CFR 201.7(c)(6). The Tribe assures that it will comply with all applicable regulation and federal statutes in effect with respect to the periods for which it receives grant funding in compliance with 44 CFR Parts 200 and 3002. The Tribe will amend its plan whenever necessary to reflect changes in Federal or tribal laws and statutes.

The Council will formally adopt the THMP after receiving a letter from FEMA stating that the plan is approved pending adoption. The THMP adoption resolution will be signed by the Council and will be placed in Appendix F. This document will show the Tribe's commitment to implementing the mitigation strategies identified in the THMP and authorizes the responsible agencies to execute their actions.

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FIGURES

ASSET KEY:

1. CITY OFFICE
2. OUR STORE
3. TIDES OUT (STORE)
4. CHIGNIK BAY TRIBAL COUNCIL BUILDING
5. CHIGNIK BAY ADVENTURE B&B
6. CITY STORAGE TRAILERS
7. BRIDGE
8. CHIGNIK BAKERY
9. FARWEST BUNKHOUSE / RESTAURANT AND OFFICE
10 CHIGNIK VARIETY STORE
11. POST OFFICE
12. SCHOOL / GYM
13. TEACHER HOUSING
14. SCHOOL GENERATOR
15. SEWAGE LAGOON
16. WASTE TREATMENT PLANT (WEST SIDE)
17. OLD GENERATOR / CITY MAINTENANCE BUILDING
18. FIREHALL / FIRST RESPONDER EQUIPMENT
19. STORAGE UNIT
20. CITY SHOP / EQUIPMENT
21. PUBLIC SAFETY APARTMENT / OFFICE / EQUIPMENT
22. COMMUNITY HALL
23. TRIDENT SUPPORT BUILDINGS
24. TRIDENT GAS STATION
25. TRIDENT BUNKHOUSE
26. TRIDENT BUNKHOUSE
27. TRIDENT WEB LOFT
28. TRIDENT TANK FARM
29. TRIDENT BOAT YARD
52. WATER STORAGE TANK
53. LANDFILL
54. CEMETERY 1
55. CEMETERY 2
57. BIBLE CHAPEL
58. ANCHORAGE BAY
59. INDIAN CREEK
65. TSUNAMI SHELTER
66. GCI SATELLITES / BUILDING**
67. ACS SATELLITES / BUILDING
68. TSUNAMI SIRENS
69. ROADS *
70. OVERHEAD UTILITIES LINES *
71. UNDERGROUND UTILITIES LINES *
72. TRIBAL SHOP / EQUIPMENTS
73. HYDRO DAM
74. WATER TRESTLE
75. HYDRO ROAD
76. SCHOOL TANK FARM

* NOT SHOWN FOR CLARITY

MAP NOTES

This map was prepared by the Lake and Peninsula Borough (LPB) in cooperation with the Alaska Department of Community and Economic Development (DCED) using funding from the Coastal Impact Assistance Program, Coastal Management Program, Bureau of Indian Affairs Transportation Planning and funding from the Initiative for Accelerated Infrastructure Development (IAID). The IAID is supported by grants from the Denali Commission, USDA Rural Development, Alaska Department of Transportation and Public Facilities and DCED. The Alaska Native Tribal Health Consortium provided sanitation facility records. The LPB contracted with Global Positioning Services Incorporated in June of 2002 to prepare the map.
This map should not be construed as a survey. On-site surveys should be conducted prior to engineering or construction.

This map was compiled to meet horizontal and vertical accuracy in accordance with national map accuracy standards.

The ANCSA 14(c) Plat displayed on this map has not been recorded as of the date this map was published.

Property and utility information has been generated from readily available sources with limited accuracy checks. Property information is not intended to represent a title search of the Recorders Office record. Utility location is approximate and shows only the main lines as the service lines have been omitted for clarity. Generally, the information is current as of December 2002.

This map is based on photography acquired on July 11, 2002 and July 31, 2002, at a nominal scale, of 1 in = 800 ft.

AeroMap U.S. prepared the orthophoto and topographic mapping.

The orthophoto is an aerial photo which has been corrected, by rectification to ground control stations, to remove distortions and warpage due to ground topography and aircraft tilt and trim.

HORIZONTAL AND VERTICAL CONTROL

The control monument for the digital orthophoto was National Ocean Service (NOS) Station '945 8917 I TIDAL' Published horizontal datum NAD 1983 coordinates for this monument are North 56° 17' 44.87368" and West 158° 24' 19.90515". The vertical datum Local Tidal for this monument is 15.6 feet above mean high water (MHW).

The contours were prepared at two (2) foot contour intervals with index contours every ten (10) feet. Two (2) foot contours have been omitted in steep areas, leaving only the index contours, for clarity.

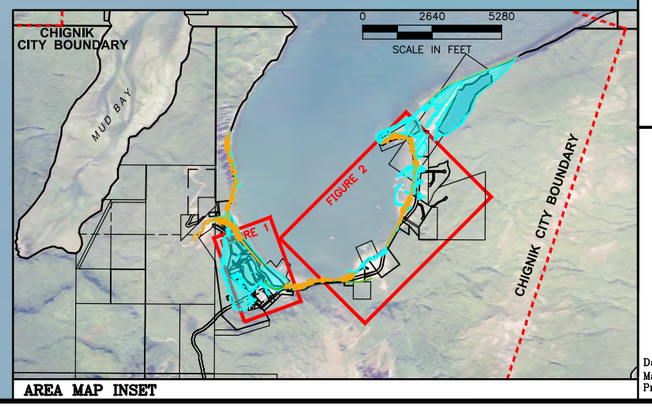
FLOOD DATA

The U.S. Army Corps of Engineers (USACE) report "Alaska Communities Flood Hazard Data 2000, has a published flood of record which occurred in 1948 with a flood elevation of 9.58 feet based upon this maps vertical control.

True North

Magnetic North 17° E

ANCHORAGE BAY



AREA MAP INSET

Community Map
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

LEGEND

- EROSION
- FLOODING
- LANDSLIDE / AVALANCHE

0 200 400 600
SCALE IN FEET

Date of Photography: July 11 & 31, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

FIGURE 1 of 2

CHIGNIK COMMUNITY MAP SHEET 1 1"=200' (2002 PHOTOGRAPHY)

Community Map
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

LEGEND

- EROSION
- FLOODING
- LANDSLIDE / AVALANCHE

0 200 400 600
SCALE IN FEET

Date of Photography: July 11 & 31, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

FIGURE 2 of 2

ASSET KEY:

30. CITY GENERATOR SHACK
31. CITY TANK FARM
32. SUBSISTENCE BUILDING
33. TRIDENT OFFICE
34. TRIDENT BUNKHOUSE 1
35. TRIDENT BUNKHOUSE 2
36. TRIDENT STORE
37. TRIDENT BUNKHOUSE 3
38. TRIDENT TRAILER 1
39. TRIDENT TRAILER 2
40. HARRIS SUBREGIONAL CLINIC
41. HABOR MASTER BUILDING
42. BOAT HARBOR
43. WASTE WATER TREATMENT (EAST SIDE)
44. WATER STORAGE TANK (EAST SIDE)
45. OCEAN BEAUTY (CANNERY STORAGE)
46. AIRPORT MAINTENANCE BUILDING
47. AIRPORT RUNWAY
48. BARGE / BOAT LANDING
49. BARGE / BOAT LANDING
50. BERRY FLATS
51. CHIGNIK INTERNATIONAL AIRPORT
56. RECREATIONAL LAKE (AIRPORT LAKE)
58. ANCHORAGE BAY
60. HUMES CREEK
61. DEBBIE'S CREEK
62. TINA'S CREEK
63. FISHING GEAR STORAGE
64. AWAS STATION
69. ROADS *
70. OVERHEAD UTILITIES LINES *
71. UNDERGROUND UTILITIES LINES *

* NOT SHOWN FOR CLARITY

Magnetic North 17° E
True North

CHIGNIK COMMUNITY MAP SHEET 2 1"=200' (2002 PHOTOGRAPHY)

APPENDIX A

Planning Process

- Meeting Minutes (October 3, 2018)
- Hazard Identification Worksheet
- Meeting Minutes (February 20, 2019)
- Sign-In Sheet
- Risk Analysis Worksheet
- Map Mark Ups
- Mitigation Action Types & Examples
- Potential Mitigation Actions
- Mitigation Action Evaluation Worksheet

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MEETING MINUTES

Project: **BBNA THMP & TTSP Project**
Bristol Project No: 32190013
Reference: Chignik Bay THMP Workgroup Packet 1
Date of Meeting, October 3, 2018 1:00 PM to 3:00 PM
Location of Meeting: Teleconference
Participants:
Bristol: Danielle Dance,
BBNA: Annie Fritze,
Chignik Bay Planning Team: Peter Anderson, Joanna Orloff, Alannah Anderson, Debbie Carlson

Summary

A teleconference meeting was held to work through the first Tribal Hazard Mitigation Plan (THMP) Workshop Packet. Hazards to profile in the THMP were identified, and further instructions were provided to complete the remaining worksheets in the packet.

Action Items

- Planning Team – Fill out Risk Analysis Worksheet #3. List and identify assets and identify if the hazards will have an impact on each of the assets.
- Planning Team – Mail surveys to Bristol.
- Planning Team – Email list of Planning Team members (Completed)
- Bristol – Mail a set of community maps (11x17) to identify areas of erosion, avalanches, and landslides.

General Notes

-

Profiled Hazards

- Avalanche
  - 2000 – Avalanche covered road and lost access to the airport for about 2 weeks.
  - 2013 almost took out fuel tank
    - Take out utilities, shut down generators and impacts residents.
  - Never know year to year
  - Can happen yearly
- Earthquake
  - January 2018 - 7.6 on Richter scale.
    - Everyone had to go to higher grounds. Things feel off the walls in homes but there were no injuries.
    - There is no shelter so they sat in cars all night. It was -20°. Residents ran out of gas.

  - If there was a major earthquake it could take out water lines under the bridges, phone lines and cell towers, fuel, and generators.
  - 1964
  - Japanese earthquake – The community was flooded because it is a low lying community. There was not a tsunami but the tides were higher than usual.
  - Residents report cracks in walls due to earthquakes.
  - Residents feel earthquakes at a minimum 1 to 2 times a month
- Erosion
  - Major erosion is happening by the
    - Airport (runway area)
    - Clinic
  - River in middle of town and has major erosion happening right now. The waterline is located under the bridge.
    - River erosion could damage the bridge which will impact the community waterline.
    - The community is working to correct this issue. An emergency ADF&G habitat permit was granted.
      - Armor rock is being placed to stabilize the area so the erosion won't take out their bridge and other structures.
  - The community has waterfalls nearby. These waterfalls become bigger when it rains. This causes erosion all year.
    - The waterfalls are larger in the fall and spring (due to spring runoff)
    - These have the potential to wash homes away.
    - One home has a river underneath due to severe rains and erosion issues.
  - Beaches have dramatically receded due to high tides
- Extreme Cold
  - Pipes freeze every winter. The older structures have copper tubing. Some structures have frozen water for 2 months.
  - January / February usually coldest time. Temperatures are around 20°F but with a northly wind (winchill factor) can get below 0°F.
- Flood
  - Basements are getting flooded, residents are pumping out basements.
  - The community experiences high tides (10 foot tides). These tides come over the banks.
  - In the past the whole community was flooded (under water). As a result the roads were built up more so it wouldn't take out the roads.
    - Couldn't get kids to school
  - When areas are flooded it takes roughly 2 - 3 hours for the water to dissipate.
  - Last fall – swamp lands flooded
  - Flooding happens yearly.
  - Last year flooding - Office had 12 inches of water. There are water marks visible.
  - Airport floods when there is a lot of rainfall. The runway gets soft and planes can't land.
    - When the airport is closed residents can boat up to Chignik Lagoon as long as boats can get out of the harbor. If they are unable to get out of the harbor then they are stuck.

- Landslides
    - Spring thaw causes mud slides.
    - Rocks fall off the mountain. This is dangerous because it is unknown when a rock will fall. Big boulders land on the road.
        - Roads close to mountains (be careful in spring)
    - Mud comes down with waterfalls and covers road
    - Depends on stability of mountain
    - At least 2 times a year
- Severe Wind
    - Whole top of house came off
    - Smoke house was blown to the middle of the road
    - ATV blowing down the road
    - Electric poles blowing down
    - Some structures have cable over the roof to keep in place.
    - 2000 - 120 mph wind
    - 2017 - Last winter 100 mph winds
- Snow / Winter Weather
    - 2011 – Snow was up to roof, couldn't see out of windows
    - 2012 – Whole cannery collapsed due to snow loads.
        - Still paying for this causing an impact on community economy
    - It takes roughly 8 hours with 3 people to make the roads drivable.
        - Airport is top priority
    - Community either sees lots of snow or lots of rain – depends on the year.
- Tsunami
    - No actual tsunami, currently gets higher tides than normal.
        - Causes flooding
    - Gets a warning at least once a year.
    - tsunami center will send text and call via phone to a few people in town, to tell them to go to higher ground
        - January they received a message that said "this is not a test – get to higher ground". This warning lets them know where the earthquake was located. When the danger subsides they get "an all clear" alert.
        - This system works as long as cell phones are working
        - GCI backup generator battery recently replaced to allow for longer usage.
        - There are a few people in town that have personal satellite phones that they use if needed.
    - Tsunami warning, activated manually – There is currently one person that knows how to activate the system.
- Volcano
    - Concerned about the volcano right now.
    - Ashfall is biggest concern.
    - 2013 limited dusting on vehicles.
        - Depends on wind direction.
    - Community experiences a large amount of respiratory issues (asthma) – biggest concern.
    - ANTHC sent masks down to clinic last week (Sept 2018)

        - Health aide will hand them out and teach residents how to put them on properly.
        - Heavier masks are for those with asthma (priorities)
    - Ashfall can impact water (Open dam) – The water would be un drinkable if ash were to get in it.
        - Village and city council ordered bottles of water to have on hand just in case they need it.
- Wildfire
    - Dump caught on fire about 20 years ago
    - 4 or 5 years ago was a dry summer and fire restrictions were placed (No BBQing).

Non-Profiled Hazards

- Drought
    - Had a dry summer in 2015
- Extreme Heat
    - "It's our dream"
- Subsidence
    - Some sink holes on roads

Attachments:
Hazard Identification Worksheet

WORKSHEET #1: HAZARD IDENTIFICATION

Use this worksheet to identify which hazards are most significant to your community planning area. Follow the instructions provided on pages 9 and 10.

Write "Blue" "Green" "Yellow" or "Red" in Columns A-D based on definitions in Tables 1-4 on Pages 9-10.

Write "Yes" or "No" in Column E depending on the outcome of Column D.

Hazard	Column A Location (Geographic Area Affected) *(Table 1)*	Column B Maximum Probable Extent (Magnitude / Strength) *(Table 2)*	Column C Probability of Future Events *(Table 3)*	Column D Overall Significance *(Table 4)*	Column E Profile (Yes/No)
*Avalanche	Red	Red	Red	Red	YES
Drought	Blue	Blue	Blue	Green	No
Earthquake	Red	Red	Red	Red	YES
Erosion	Red	Red	Red	Red	YES
*Extreme Cold	Red	Yellow	Red	Red	YES
*Extreme Heat	Red	Blue	Blue	Green	No
Flood	Red	Red	Red	Red	YES
*Landslide	Red	Yellow	Red	Red	YES
Severe Wind	Red	Red	Red	Red	YES
*Severe Winter Weather	Red	Red	Red	Red	YES
*Subsidence	Green	Blue	Green	Green	No
Tsunami	Red	Red	Red	Red	YES
Volcano	Red	Red	Yellow	Yellow	YES
Wildfire	Red	Red	Green	Red	YES
Other					

***** Definitions for selected hazards are located on the back for clarification.

SELECT HAZARD DEFINITIONS

Extreme Temperatures *(i.e. Extreme Cold, Extreme Heat)*: Extreme temperatures constitute different conditions in different parts of the country. In regions that are accustomed to winter weather, extreme cold temperatures involve temperatures between 20° F to -50° F. These temperatures can occur after a winter storm or during long durations of storm inactivity. Similarly, extreme heat is usually recognized as the condition where temperatures consistently stay ten or more degrees above the average high temperature for extended periods of time. Fatalities can occur from extreme temperatures by causing hyperthermia or frostbite in cold regions and hypothermia in warmer regions.

Landslide / Avalanche: A landslide is the movement of a mass of debris, rock, or earth by force of gravity down a slope. An avalanche is the movement of snow and debris down a slope by force of gravity. Landslides and avalanches occur when the stability of the slope changes from stable to unstable. This can be caused by storms, earthquakes, volcanic eruptions, fire, erosion, rapid temperature changes in the case of avalanches, and other human-induced activities. Steep slopes and long slopes have a higher probability to slide. High soil water content and/or slopes with low vegetative coverage are also likely to slide. Landslides and avalanches cause infrastructure and property damage, environmental disturbance, and possible injuries and fatalities.

Severe Winter Weather: Severe winter storms can include snow, freezing rain, sleet, or a mix of the previous forms of precipitation. Heavy snowfall occurs when large quantities of snow is produced in a short period of time. Drifting snow creates an uneven distribution of snow caused by strong winds. This weather can cause power outages, downed trees, and property damage. It can also cause deaths and injuries.

Subsidence: Subsidence is the settling over time or sudden sinking of surface soils due to subsurface movements. Some causes of subsidence are thawing permafrost, declining ground water levels, compactions, mining, and drainage of organic soils. Subsidence can destroy or damage infrastructure or buildings near areas affected by a sudden or gradual collapse of surface area.

NOTE: If you have any questions about the hazard definitions, or about Worksheet #1 in general, contact Danielle with Bristol at (907) 743-9394.

INSTRUCTIONS FOR WORKSHEET #1

Worksheet #1 is a tool to determine which hazards to include in the Tribal Hazard Mitigation Plan (THMP). Use these classifications / definitions to help identify the most significant hazards that affect your community. Give each hazard on Worksheet #1 a color code based on the definitions provided in Tables 1 – 4.

1. **Location (Geographic Area Affected)** – *[Column A]*

   This classification describes where the hazard occurs, how often it occurs, and how much of the community was impacted.

Table 1: Location (Geographic Area Affected)

Color Code	Area Affected	Definition
BLUE	Negligible	• Only one small area or none • Less than 10% of planning area • Isolated single-point occurrences
GREEN	Limited	• Only some of the community • 10% to 25% of planning area • Limited single-point occurrences
YELLOW	Significant	• Most of the community • 25% to 75% of planning area • Frequent single-point occurrences
RED	Extensive	• Almost all or All of the community • 75% to 100% of planning area • Consistent single-point occurrences

2. **Maximum Probable Extent (Magnitude / Strength)** – *[Column B]*

   This classification describes how much damage was done, how fast and for how long the hazard impacted the community, and the strength or magnitude of the hazard on a scientific scale, if applicable.

Table 2: Maximum Probable Extent (Magnitude/Strength)

Color Code	Maximum Extent	Definition
BLUE	Weak	• Little to no damage done • Slow speed of onset or short duration of event • Limited classification on scientific scale (if applicable)
GREEN	Moderate	• Some damage and loss of services for days • Moderate speed of onset or moderate duration of event • Moderate classification on scientific scale (if applicable)
YELLOW	Severe	• Devastating damage and loss of services for weeks or months • Fast speed of onset or long duration of event • Severe classification on scientific scale (if applicable)
RED	Extreme	• Catastrophic damage and uninhabitable conditions • Immediate onset or extended duration of event • Extreme classification on scientific scale (if applicable)

3. Probability of Future Events – *[Column C]*

This classification describes the possibility of the hazard occurring in the next year, and how often the hazard will occur.

Table 3: Probability of Future Events

COLOR CODE	Probability of Future Event	Definition
BLUE	Unlikely	• Less than 1% probability of occurrence in the next year • Recurrence interval of greater than every 100 years
GREEN	Occasional	• 1% to 10% probability of occurrence in the next year • Recurrence interval of 11 to 100 years
YELLOW	Likely	• 10% to 90% probability of occurrence in the next year • Recurrence interval of 1 to 10 years
RED	Highly Likely	• 90% to 100% probability of occurrence in the next year • Recurrence interval of less than 1 year

4. Overall Significance – *[Column D]*

This classification provides a way to determine how much impact the hazard has on the community. This classification is based on the classifications from Tables 1 – 3 (Columns A – C).

Table 4: Overall Significance

COLOR CODE	Impact	Definition
GREEN	Low	• Event has minimal impact on planning area • Two or more criteria fall in lower classifications (2 or more BLUE) • Profile – Likely doesn't need to be profiled but can
YELLOW	Medium	• Event's impacts on the planning area are noticeable but not devastating • Criteria fall mostly in the middle ranges of classifications (2 or more GREEN or YELLOW) • Profile – Choice of the Planning Team
RED	High	• Event is likely/highly likely to occur with severe strength over a significant or extensive portion of the planning area • Criteria consistently fall in the high classifications (2 or more RED) • Profile – Definitely profile

5. Profile (Yes OR No) – *[Column E]*

For the purposes of the THMP, "profile" means to include the hazard in the plan and analyze in more detail. Not all hazards need to be profiled for your community. Only hazards with a moderate to high overall significance should be included in the plan, but the Planning Team can choose to profile any hazard as they see fit. Use Table 4 (Column D) to determine if the hazard should be profiled.

Bristol
ENGINEERING SERVICES COMPANY, LLC

111 W. 16th Avenue, Third Floor
Anchorage, AK 99501-5169
phone (907) 563-0013
fax (907) 563-6713
www.bristol-companies.com

MEETING MINUTES

Project: **BBNA THMP & TTSP Project**
Bristol Project No: 32190013
Reference: Chignik Bay Planning Team Meeting
Date of Meeting: February 20, 2019, 2:30 PM – 5:15 PM
Location of Meeting: Bristol Large Conference Room
Participants:
Bristol: Danielle Dance, and Jackie Wander
BBNA:
Planning Team: See attached sign in sheet

Summary

Jackie, and Danielle with Bristol hosted a planning team meeting with a few members of the Chignik Bay Council members in the Large Conference Room of the Bristol Bay Building. This meeting was to continue to collect more information for the Tribal Hazard Mitigation Plan (THMP). During the meeting, assets, vulnerability statements, mitigation goals, and mitigation strategies were discussed. Additionally hazards and assets were identified on the map. Notes taken throughout the meeting are summarized below.

THMP Planning Team Meeting Notes

Map Mark Ups – Hazard Locations

- Erosion
  - There is erosion along entire bank near runway all the way to the boat harbor
  - Eddies have formed near new dock, waves are digging out holes
  - In front of tribal office is really bad
  - Especially near Indian Creek
  - The buttresses that the bridge are sitting on are eroding, and they would need to use this bridge to evacuate if needed, there is a second bridge in the middle of town near the slough, two other bridges by the cannery, all of them are experiencing erosion from the tides and flooding
  - There's a new rock quarry and hydro road going towards reservoir, the bank fell away, they can't even drive around that area anymore
  - They take a picture every year of the erosion
  - Airport road is right along bank, and used to be farther out into where is now water
  - There is a new Trident dock, marked on map
  - Flooded out the road by the cannery
  - Another river eroding by their house
  - Erosion at the foot of the mountain, it's all wetlands, you can't even walk over there anymore, it floods back there enough to run skiffs over in the spring, erosion all along the wetland area

    - Erosion along the entire coast line
    - Had to redo the small boat harbor last summer, the waves broke down the rock, it was not the high grade of rock that it should have been
    - A lot of erosion going up to the dump along the road
    - The whole road washes out and floods in the middle of the village
- Avalanche / Landslide
    - Happen in the same areas
    - Between trident and Billy's, people go fast on this road to avoid falling rocks, one rock hit a windshield once
    - Side near the cannery fell down and almost took out the fuel tank and power plant in February 26, 2013, took out the road, heavy snow the night before, had to build a temporary road to get around
    - Along cliff, and by new HUD homes, and near the school
    - Another avalanche March 2000, had to close the school, had to use the barge to move the grader from one side of the village to the other to clear the airport, March 16 was a fatality, tied up the barge at the loading dock to get fuel after moving the grader, was throwing the line around the piling, someone else moved the barge, lost his balance, fell and was crushed

Worksheet #3 – Risk Analysis (see table for complete list)

- Facilities were numbered and marked on the maps (see attached)
- Two stores are personal residences but public stores, Our Store and Tide's Out
- Abandoned historical buildings, they do not want to list, the buildings are a hazard
- Far West has a Duplex, bunkhouse, restaurant, 2-story apartment/office building all on one property
- Post office is also residential home, 1 worker, and 4 residents live upstairs
- Old cannery has bunkhouses are not used, fuel is stored at the old cannery and the boat launch is used there, but the cannery is burnt
- School is Pre-K through 12th grade, teacher housing, generator shack, and gym is attached to the school, 13 kids and 7 staff
- Backwash sewage lagoon across the street from the Water Treatment Plant for the west side of the village, there is another WTP for east side
- 6 guys work in the City shop, old generator shed for the city, fire hall, and storage unit
- 1 person works at community hall, but can have over 20 people during events
- All the trailers at "Trident Support" are abandoned, one cannery blew down and one burnt up, so there is no cannery anymore, they still use part of the large building for generators, freight, storage, etc.
- 6-7 apartments in the trident bunkhouses that are used occasionally used
- 3-4 new HUD homes near the slide area kiddy-corner to cannery
- Subsistence Building will be used for a City Maintenance building and storage unit for freight in the future
- Trident bunkhouse 1 is not used, but they were fixing it up last summer, has at least 25 rooms, so they might use in the future
- Trident bunkhouse 2 is fully occupied in the summer, starting in April
- Ocean Beauty is the cannery storage area, owned by the city

- "Chignik International" is a small shack/shelter for people at the airport
- Recreational area by lake, gets a lot of flooding, water covers beaches during heavy rain
- Creeks and Bay used for fishing humpy's, salmon, etc.
- Fishing gear storage for crab pots, etc.
- Alaska Weather and Atmospheric Station (AWAS)
- Tsunami shelter is a connex but has beds and cabinets, was just fixed up
- Tsunami siren is monitored weekly
- Tribe equipment: Dump truck, bob cat, brush cutting gear, augers, shredder, truck
- Ambulance by the fire hall, with first response equipment
- Public safety office has a vehicle and a boat
- Road is just being built to the hydro dam

Worksheet #4 – Vulnerability (Problem) Statements

- These statements explain why the specified hazards should be profiled
- Bristol will develop these statements in the Draft Plan and will be available for review in the Draft.

Worksheet #5 – Mitigation Goals

- Broad statements of what the community wants to see happen for each of the specified hazards. These were briefly discussed to determine which goals they would like to focus on. These will be available in the Draft Plan.
- Build capacity of tribe to prepare, respond, and recover from disasters
- Reduce the possibility of damages due to [*profiled hazard*].

Worksheet #6 – Mitigation Strategies

- What can be done about the specified hazards and goals?
- See attached Worksheet #6 for more information
- Chignik Intertribal Coalition was recently formed, could be used as a resource
- Avalanche
    - Avalanche warning system, be careful on certain roads, signs would be a great idea
    - For small avalanches, the City goes out and clears the snow, but they have to be careful because there could always be another
    - Alternative routes for transportation to get to clinic, airport, school, post, office, boat harbor, gas station, and for people to get back to homes, etc.
    - Avalanche and landslides cuts off the east and west sides of the village
    - In the past, they brought in a big gun to shoot up at the hill, but nothing came down, could perform controlled avalanches in the future
- Landslides
    - Falling rock signs
    - Landslides usually happen in the spring
    - Rock netting probably would not work because there are so many waterfalls, which freeze up in the winter
    - Could always use improvement on response because do not always have the same people in town

- Earthquake
    - Encourage people to secure bookshelves to walls
    - The school currently does fire and earthquake drills
    - Emergency supply kits
    - People check their propane lines and stuff after an earthquake, people keep their stuff very secure because of the high winds
- Tsunami
    - Took a long time to repair the tsunami warning siren because they needed a part, it has not worked a few times in the past when earthquakes have hit, they send a guy down once a year to inspect, but could have the spare parts on hand or train someone locally
    - Need shelters on both sides of the village, the connex is not big enough for everyone, if the bridge went down, they would have to hike
    - Evacuation route signage and also community outreach, maps in every building, one time in the middle of winter had a tsunami warning and forgot about 3 guys that had come into town for the hydro project, had to go back and get them, they usually have a list of people to check head counts
- Volcano
    - If there is an eruption, it would contaminate the water supply, need to have extra water on hand, the tank would only last about 2 weeks
    - They went to ANTHC in the past to get masks because Kanakanak did not have enough
    - They do have extra filters for the generators, but should have more than a couple on hand, evaluate way to protect equipment from ash
    - Teach people to flush out cars before starting them up, telling them to buy spare filters
    - Teachers did a class on ash in the past after an eruption nearby to teach the kids, how to put the mask on without touching the inside
    - There is a special kind of mask for asthma, green ones, individually fitted, different filters, education people with respiratory issues on this
    - Improve communication with AVO, was difficult to coordinate with them during a past eruption
    - Encourage people to have at least a week of excess of prescribed medication on hand in case planes cannot land
- Erosion
    - Consider breakwater or dikes to catch the water, or seawalls
    - Inspect the Indian Creek bridges and repair abutments as needed
    - They currently maintain the culverts, they have to clear out the ditches in the spring
    - Tribal Council has access to the gravel pit through TTIP program, for road improvements and washouts, not good material for breakwater
    - They were getting rock last year from Sand Point, and one other source that is good
    - Need seawall or something near the road to the airport
    - One culvert comes off every year and tears the road down
- Extreme Cold

  - Water and sewer freezing is the biggest problem, had several homes that did not have running water or sewage, one year didn't get water until June
  - Water lines are buried about 8-feet deep, do not have heat tape
  - Educate homeowners on how to install their own heat tape, because if one persons house freezes, it backs up and floods other homes
  - The fuel even gels up sometimes when it is that cold
  - Need the chemical to put in the fuel to keep it from gelling up, had to do that in the past
  - Need education, especially for newcomers, who come into town and then go hiking up the hill or to the reservoir, had one person freeze to death, also had one lady attacked and killed by wolves, she was running in the dark with headphones on
  - Have lost a lot of guys in the bay due to skiffs capsizing and boats icing up, educate, people go clamming in January, outboard breaks down
  - They have a public safety skiff, but don't have a VPSO, so volunteers need to take their own boats out during emergencies
- Winter Weather
  - They have very icy roads, encourage people to use ice cleats and chains for vehicles
  - They currently plow and put out gravel
  - Regular inspection of power lines in case they get iced up or blown over by wind, and secure the leaning over power lines
- Flood
  - Keep ditches and culverts clear
  - The Main Road (Anderson Road) needs to be built up more, used to be higher but has lowered over time
  - Sometimes the water will cover the road and you can't get to school
  - More ditches, bigger culverts
  - Some water washes under houses and floods basements, some houses need to be raised, most homes are built on pilings
  - Clinic has a cement foundation
  - Ensure future homes and buildings are built for local conditions, the clinic siding flies off all the time, work with agencies (Denali commission funded the clinic)
  - Some people have their skiffs or kayaks to use if needed
  - Could look into getting sandbags for people who have flooding issues
  - Had to raise the floor of the community hall 12-inches because it was flooding
- Wildfire
  - Have to trim down the trees near the overhead power lines
  - Cut down brush, overgrowth of alders are like weeds, they are going to order a brush trimmer attachment to put on the bobcat, they purchased chainsaws last year but that did not work very well because there is too much brush
  - Educate about fire barriers around homes
  - Make sure volunteer fire department is up and running and that the fire truck is up to date, training, need to get portable extinguishers for areas where the fire truck cannot go, maintain fire hydrants, extinguishers should be placed strategically and

inspected, most homes have their own extinguishers, the council has bought extinguishers and alarms in the past, they have a small and large fire truck
    - Need to identify safe buildings for people to go on either side, school, community hall, and clinic, one on each side of the village
    - Have had smoke at the dump, need education about burning, need burn barrels and better regulation on what to burn and how
    - There have been a couple of house fires, some have wood stoves (people use scrap wood or drift wood), and people have the steam baths
    - People took the hoses at the fire hydrants
- Wind
    - There is a spare generator for the clinic is not at the clinic right now, it needs to be brought over from the City shop
    - Most roofs are tin, loose pieces of plywood flying around, need encourage people to secure loose debris and roofs
    - Educate people on covering up their windows, hardest winds are from the south
    - Encourage people to have their own spare generators on hand
    - Education about marine safety, securing their boats and tying them up properly
    - When the wind blows, it blows crab pots into the ocean from the storage area
- Goal: Build the capacity of the tribe to prepare and respond to disasters
    - Emergency food, water, and medical supplies, etc.
    - Communication devices, one on each side, City office, Tribal office, and clinic, strategically placed locations
    - Update SCERP and Emergency Plan, they are pretty outdated, they are starting on the SCERP this year
    - Post up emergency contact numbers for entities in nearby communities

*See mitigation action worksheet for goal details
*Public meeting will take place in May 2019.
*Windy.com (Windy TV) tells you a good day to fly.

Attachments:

1. Planning Team Meeting Sign-in Sheet
2. Worksheet #3: Risk Analysis
3. Worksheet #6: Mitigation Strategies
4. Map Markups

End Meeting Minutes
CC: File

Planning Team Meeting

Chignik Bay Tribal Hazard Mitigation Plan (2019 - 2024)
Date / Location: February 20 , 2019 / Bristol Office (Anchorage)

Sign In Sheet

Name	Phone	Email
Debbie Carlson	907-749-4018	Chaytc@aol.com
Jeanette Carlson	907-749-4019	jeanettescarlson@aol.com

Risk Analysis Worksheet *(Profiled Hazards Only)*

Facility Number	Facility Name	Number of Occupants	Location	Estimated Value	Hazard Impacts										
					Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
1	City office	2													
2	Our Store	2													
3	Tides Out (Store)	1													
4	Chignik Bay Tribal Council Building	2													
5	Chignik Bay Adventures B&B	2													
6	City Storage Trailers	N/A													
7	Bridges (4)	N/A													
8	Chignik Bakery	1													
9	Farwest Bunkhouse/Duplex/Restaurant/2-Story Apartment and Office	2													
10	Chignik Variety Store	1													
11	Post Office	1													
12	School / Gym	20													
13	Teacher Housing	7													
14	School Generator	1													
15	Sewage Lagoon	1													
16	Water Treatment Plant (West Side)	1													

Risk Analysis Worksheet *(Profiled Hazards Only)*

Facility Number	Facility Name	Number of Occupants	Location	Estimated Value	Hazard Impacts										
					Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
17	Old Generator Shack / City Maintenance Building	6													
18	Firehall/First Responder Equipment	6													
19	Storage Unit	6													
20	City Shop/Equipment	6													
21	Public Safety Apartment / Office / Equipment	1													
22	Community Hall	1 - 20+													
23	Trident Support Buildings	10													
24	Trident Gas Station	2													
25	Trident Bunkhouse	7													
26	Trident Bunkhouse	6													
27	Trident Web Loft	8													
28	Trident Tank Farm	1													
29	Trident Boat Yard	N/A													
30	Generator Shack (City)	2													
31	City Tank Farm	3													
32	Subsistence Building	2													

Risk Analysis Worksheet *(Profiled Hazards Only)*

Facility Number	Facility Name	Number of Occupants	Location	Estimated Value	Hazard Impacts										
					Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
33	Trident Office	5													
34	Trident Bunkhouse 1	25													
35	Trident Bunkhouse 2	15													
36	Trident Store	2													
37	Trident Bunkhouse 3	10													
38	Trident Trailer 1	2													
39	Trident Trailer 2	1													
40	Harris Subregional Clinic	6													
41	Harbor Master Building	1													
42	Boat Harbor	N/A													
43	Water Treatment Plant (East Side)	1													
44	Water Storage Tank (East)	1													
45	Ocean Beauty (Cannery Storage)	1													
46	Airport Maintenance Building	1													
47	Airport Runway	N/A													
48	Barge / Boat Landing	N/A													

Risk Analysis Worksheet *(Profiled Hazards Only)*

Facility Number	Facility Name	Number of Occupants	Location	Estimated Value	Hazard Impacts										
					Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
49	Barge/ Boat Landing	N/A													
50	Berry Flats	N/A													
51	Chignik International Airport	1													
52	Water Storage Tank (West)	1													
53	Landfill	2													
54	Cemetery 1	N/A													
55	Cemetery 2	N/A													
56	Recreational Lake (Airport Lake)	N/A													
57	Bible Chapel	2-20													
58	Anchorage Bay	N/A													
59	Indian Creek	N/A													
60	Humes Creek	N/A													
61	Debbie's Creek	N/A													
62	Tina's Creek	N/A													
63	Fishing Gear Storage	N/A													
64	AWAS Station	1													

Risk Analysis Worksheet *(Profiled Hazards Only)*

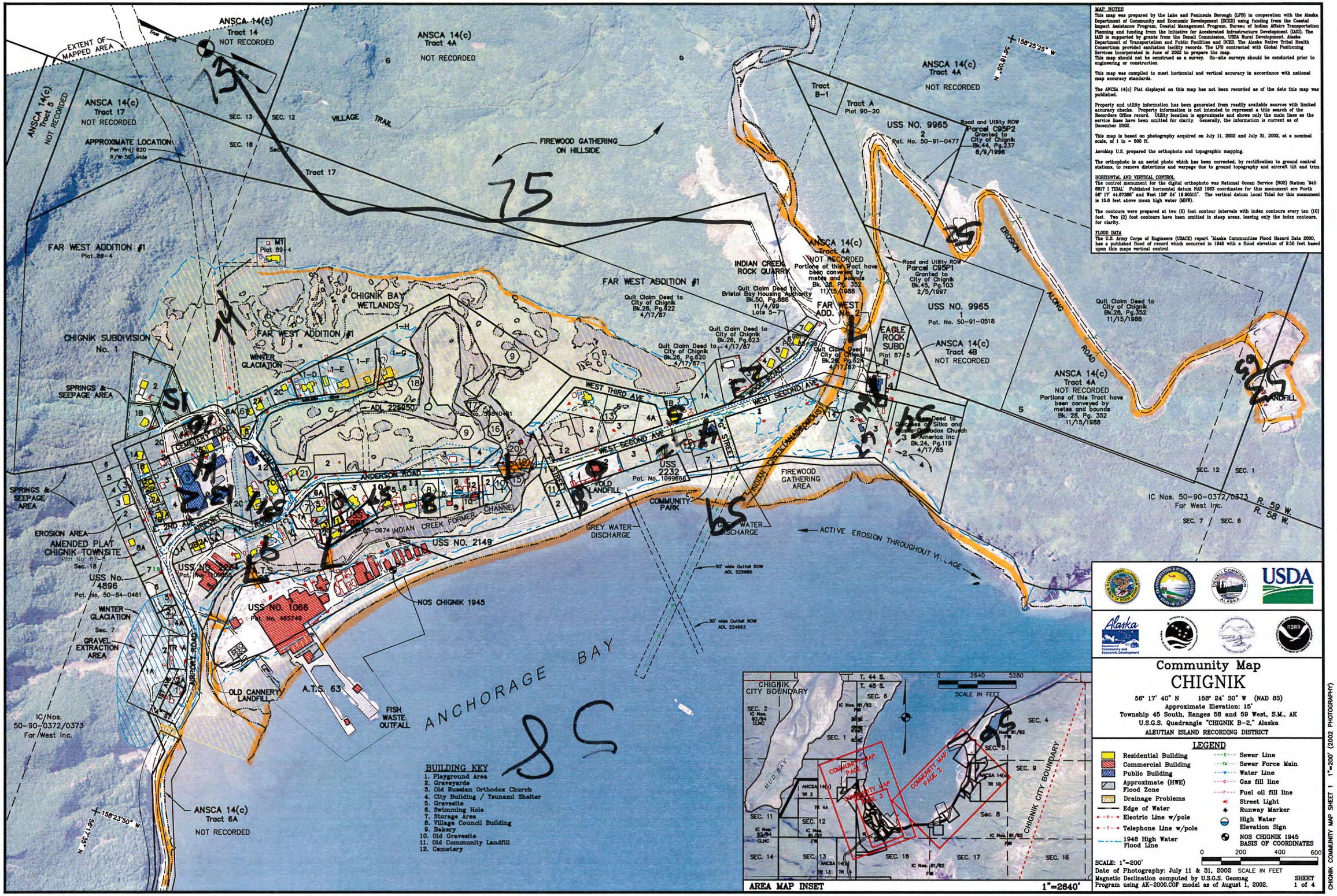
Facility Number	Facility Name	Number of Occupants	Location	Estimated Value	Hazard Impacts										
					Avalanche	Earthquake	Erosion	Extreme Cold	Flood	Landslide	Severe Wind	Severe Winter Weather	Tsunami	Volcano	Wildfire
65	Tsunami Shelter	N/A													
66	GCI Satellites/Buidling	1													
67	ACS Satellites / Building	1													
68	Tsunami Siren	1													
69	Roads	N/A													
70	Overhead Power/Phone	N/A													
71	Underground Water/Sewer	N/A													
72	Tribal Shop/Equipment	1													
73	Hydro Dam	2													
74	Water Trestle	N/A													
75	Hydro Road	N/A													

Worksheet #6 Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
1	Avalanche		Develop a warning system
		x	Avalanche Warning Signs
			Identify alternative routes to the airport, clinic, and homes, school, boat harbor (essential facilities)
			Controlled avalanches
2	Landslide	x	Landslide signs / Rock fall danger signs
			Research for best solution to handle falling rock
			Improve response
			Develop a warning system for landslides
3	Earthquake	x	Educating about securing bookshelves and other items to walls
		x	educate on emergency supply kits
4	Tsunami		Have spare parts for siren
			Train individual to repair siren
		x	Tsunami shelter on both sides
			Maintain / Improve evacuation route
		x	Evacuation route signage
			Evacuation route map in all buildings
		x	Emergency Supplies (food, water, medical supplies)*
5	Volcano	x	Supply of masks at clinic / special masks for respiratory issues
		x	Emergency Supplies (food, water, medical supplies)* Kits
			Spare filters for generators
			Evaluate best way to protect equipment
			Educate community about ashfall on equipment and care of equipment
			General volcano education / mask placement
		x	educating residents with respiratory issues about need for special mask
			improve communication with AVO
		x	educate residents to have prescribed medication on hand
6	Erosion	x	Breakwater / Seawall
		x	Inspection / repair Indian Creek Bridges (evacuation route)
		x	Extra culverts on hand
			Culvert repair
			General Repair as needed
7	Extreme Cold	x	Educate residents to install / inspect heat tape (water/sewer/fuel)
		x	chemical to prevent fuel gelling
		x	Educate residents about not hiking in winter
			Post fliers about animal safety and winter traveling
			Education about boat safety and water travel

Worksheet #6 Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
8	Severe Winter Weather		ice cleats for residents
			educate people to have chains for vehicles
		x	ensure power lines are secured
			Extra insulation
9	Flood	x	Anderson Road needs to be built up (main road)
		x	maintain existing / improve drainage
			Lift homes (HUD homes, Clinic) on pilings
			Future development structures need to be on pilings (work with agencies to build for local conditions)
			Consider sandbags for residents and public buildings with flooding issues
10	Wildfire	x	cutting brush (brush cutter - TTP funds)
			educating community about fire barrier
		x	ensure volunteer firefighters are trained and running
		x	Maintain equipment and fire hydrants (new hoses)
			Extinguishers placed around community (airport), and inspected
			Identify safe building for residents (school/community hall and clinic)
			education about burn barrels
11	wind	x	spare generator to clinic (move)
		x	fix power poles when leaning
		x	educate residents about securing roofs and loose debris
			educating residents about covering windows
		x	educate residents to have spare generators on hand
		x	educate for marine safety (tying up boats, secure crab pots)
12	Build the capacity of the Tribe to prepare, respond to, and recover from disasters.	x	communication device on each side
		x	emergency supplies (Food, water, ect.
		x	Update emergency plan and SCERP
		x	emergency contact numbers for surrounding communities and region



MAP NOTES

This map was prepared by the Lake and Peninsula Borough (LPB) in cooperation with the Alaska Department of Community and Economic Development (DCED) using funding from the Coastal Impact Assistance Program, Coastal Management Program. Bureau of Indian Affairs Transportation Planning and funding from the Initiative for Accelerated Infrastructure Development (IAID). The IAID is supported by grants from the Denali Commission, USDA Rural Development, Alaska Department of Transportation and Public Facilities and DCED. The Alaska Native Tribal Health Consortium provided sanitation facility records. The LPB contracted with Global Positioning Services Incorporated in June of 2002 to prepare the map.
This map should not be construed as a survey. On-site surveys should be conducted prior to engineering or construction.

This map was compiled to meet horizontal and vertical accuracy in accordance with national map accuracy standards.

The ANCSA 14(c) Plat displayed on this map has not been recorded as of the date this map was published.

Property and utility information has been generated from readily available sources with limited accuracy checks. Property information is not intended to represent a title search of the Recorders Office record. Utility location is approximate and shows only the main lines as the service lines have been omitted for clarity. Generally, the information is current as of December 2002.

This map is based on photography acquired on July 11, 2002 and July 31, 2002, at a nominal scale, of 1 in = 800 ft.

AeroMap U.S. prepared the orthophoto and topographic mapping.

The orthophoto is an aerial photo which has been corrected, by rectification to ground control stations, to remove distortions and warpage due to ground topography and aircraft tilt and trim

HORIZONTAL AND VERTICAL CONTROL

The control monument for the digital orthophoto was National Ocean Service (NOS) Station '945 8917 1 TIDAL' Published horizontal datum NAD 1983 coordinates for this monument are North 56° 17' 44.87368" and West 158° 24' 19.90515". The vertical datum Local Tidal for this monument is 15.6 feet above mean high water (MHW).

The contours were prepared at two (2) foot contour intervals with index contours every ten (10) feet. Two (2) foot contours have been omitted in steep areas, leaving only the index contours, for clarity.

FLOOD DATA

The U.S. Army Corps of Engineers (USACE) report "Alaska Communities Flood Hazard Data 2000, has a published flood of record which occurred in 1948 with a flood elevation of 9.58 feet based upon this maps vertical control.

Community Map
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

LEGEND

- Residential Building
- Commercial Building
- Public Building
- Approximate (HWE) Flood Zone
- Drainage Problems
- Edge of Water
- Electric Line w/pole
- Telephone Line w/pole
- 1948 High Water Flood Line
- Sewer Line
- Sewer Force Main
- Water Line
- Gas fill line
- Fuel oil fill line
- Street Light
- Runway Marker
- High Water Elevation Sign
- NOS CHIGNIK 1945 BASIS OF COORDINATES

0 200 400 600

SCALE: 1"=200'
Date of Photography: July 11 & 31, 2002 SCALE IN FEET
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

SHEET 1 of 4

CHIGNIK COMMUNITY MAP SHEET 1 1"=200' (2002 PHOTOGRAPHY)

Community Map
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

LEGEND

- Residential Building
- Commercial Building
- Public Building
- Approximate (HWE) Flood Zone
- Drainage Problems
- Edge of Water
- 1948 High Water Flood Line
- Electric Line w/pole
- Telephone Line w/pole
- Sewer Line
- Sewer Force Main
- Water Line
- Gas fill line
- Fuel oil fill line
- Street Light
- Runway Marker

0 200 400 600
SCALE IN FEET

SCALE: 1"=200'
Date of Photography: July 11 & 31, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.
SHEET 2 of 4

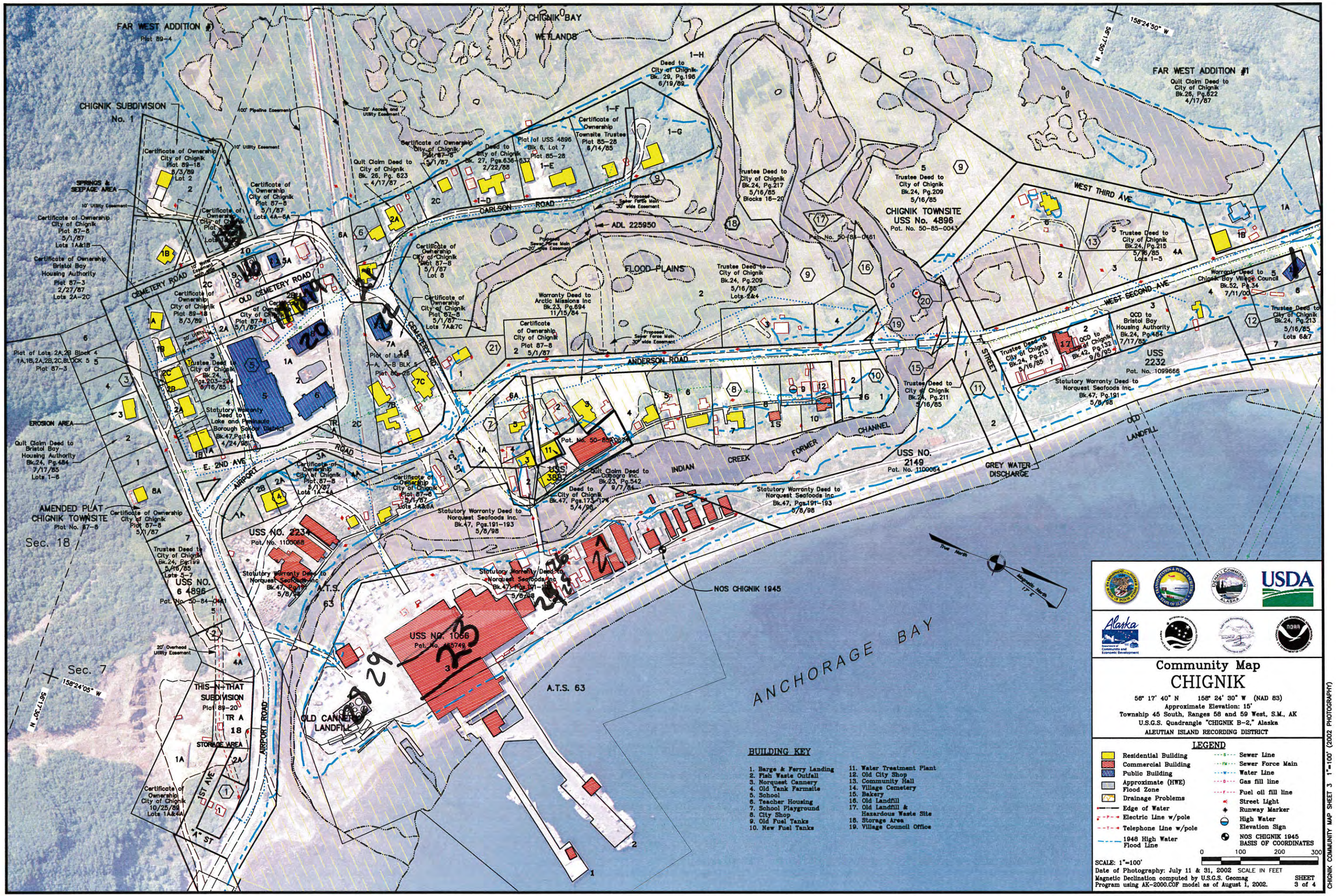
BUILDING KEY

1. New Fuel Tanks
2. Storage Area
3. Trident Cannery
4. Barge and Ferry Landing
5. Old Gravesite
6. Boat Storage Area
7. Airport Grader Building
8. Water Tank

ANCHORAGE BAY

ANSCA 14(c) Tract 11 NOT RECORDED
USS NO. 575
A.T.S. 987 Unrecorded Paper Plat
GROUNDED SHIP Used for net storage
Warranty Deed to DOT Bk. 36, Pg. 236 1/7/1992
FLOOD PLAIN
TRACT III Fee simple Title 12/18/1991
CHIGNIK AIRPORT TRACT V PARCEL A ILMT by ADL 11/07/1975
A.T.S. 969 PARCEL A
TRACT II Fee simple Title 5/12/1975
USS NO. 2151 Pat. No. 1106682
TRACT IV Fee simple Title 5/12/1975
USS NO. 1422 Pat. No. 969595
ANSCA 14(c) Tract 11 NOT RECORDED
IC Nos. 081/082 For West Inc.
SMALL BOAT HARBOR
Quit Claim Deed to Lynn Canal Investment Co. Bk. 23, Pg. 358 7/11/84
Quit Claim Deed to Lynn Canal Investment Co. Bk. 23, Pg. 358 7/11/84 Lots 4&5
Quit Claim Deed to Lynn Canal Investment Co. Bk. 23, Pg. 358 7/11/84
Quit Claim Deed to City of Chignik Bk. 29, Pg. 74 5/30/89
PERIODIC FLOODING
ALASKA PACKERS SUBDIVISION No. 2 Plat 84-5
CHIGNIK HEIGHTS SUBDIVISION Plat 90-6
Certificate of Ownership For West Corporation Plat 90-6 6/13/90
Quit Claim Deed to City of Chignik Bk. 26 Pg. 473 3/2/87
Plat 88-17
Plat 90-21 Certificate of Ownership and Dedication For West Corp 7/13/90
ANSCA 14(c) Tract 8 NOT RECORDED
Quit Claim Deed to Aquatic Ventures Inc. Bk. 41, Pg. 651 7/19/95
ANSCA 14(c) Tract 8D NOT RECORDED
USS NO. 11267
USS NO. 307 Pat. No. 1455?? Plat 88-5
A052434 NA Apin
ANSCA 14(c) Tract 6C NOT RECORDED
ANSCA 14(c) Tract 9 NOT RECORDED
A052545 NA Apin
USS NO. 1423 Pat. No. 969595
Plat 84-5 Certificate of Ownership DMS Properties, Inc. 6/25/84
WINTER GLACIATION
TRACT A Warranty Deed to ADOT Bk. 36, Pg. 887 4/21/93
ANSCA 14(c) Tract 10 NOT RECORDED
EXTENT OF MAPPED AREA
Sec. 8 IC Nos. 081/082 For West Inc.
SEC. 5
SEC. 8
SEC. 9 IC Nos. 081/082 For West Inc.
ANSCA 14(c) Tract 6A NOT RECORDED
IC Nos. 081/082 For West Inc.
USS NO. 2299 Pat. No. 1116105 Plat 85-10
USS NO. 1391 Pat. No. 907605
USS NO. 2233 Pat. No. 1102787 Quit Claim Deed to Sea Catch Inc. 2002-000193-0 5/1/02
Quit Claim Deed to City of Chignik Bk. 41, Pg. 234 3/28/1995
WINTER GLACIATION
GRAVEL EXTRACTION AREA
ANSCA 14(c) Tract 7 NOT RECORDED
FISH WASTE OUTFALL
A.T.S. 1082 Plat 95-1 Lease Agreement to Sea Catch Inc. Bk. 43, Pg. 801 5/13/96
HUMES CREEK OUTLET
ACTIVE EROSION THROUGHOUT VILLAGE
USS NO. 306 Quit Claim Deed to Sea Catch Inc. 2002-000193-0 5/1/02
ANSCA 14(c) Tract 6B NOT RECORDED
HUMES CREEK (ANADROMOUS)
McCUE CREEK (ANADROMOUS)
158°22'50" W
56°17'40" N
158°22'44" W
56°18'35" N

CHIGNIK COMMUNITY MAP SHEET 2 1"=200' (2002 PHOTOGRAPHY)



BUILDING KEY

1. Barge & Ferry Landing
2. Flat Waste Outfall
3. Norquest Cannery
4. Old Tank Farmsite
5. School
6. Teacher Housing
7. School Playground
8. City Shop
9. Old Fuel Tanks
10. New Fuel Tanks
11. Water Treatment Plant
12. Old City Shop
13. Community Hall
14. Village Cemetery
15. Bakery
16. Old Landfill
17. Old Landfill & Hazardous Waste Site
18. Storage Area
19. Village Council Office

Community Map
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

LEGEND

- Residential Building
- Commercial Building
- Public Building
- Approximate (HWE) Flood Zone
- Drainage Problems
- Edge of Water
- Electric Line w/pole
- Telephone Line w/pole
- 1948 High Water Flood Line
- Sewer Line
- Sewer Force Main
- Water Line
- Gas fill line
- Fuel oil fill line
- Street Light
- Runway Marker
- High Water Elevation Sign
- NOS CHIGNIK 1945 BASIS OF COORDINATES

SCALE: 1"=100'
Date of Photography: July 11 & 31, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

0 100 200 300 SCALE IN FEET

SHEET 3 of 4

CHIGNIK COMMUNITY MAP SHEET 3 1"=100' (2002 PHOTOGRAPHY)

erosion landslide/avalanche

ANCHORAGE BAY

MUD BAY

LAKE BAY

SEC. 32
IC Nos. 081/082 FWI

SEC. 33
IC Nos. 081/082 FWI

USS No. 11278 1
AA5978
NA Aplin

USS No. 11278 2
50-99-0113
NA Cert

SEC. 34
IC Nos. 081/082 FWI

CHIGNIK CITY BOUNDARY

T. 44 S.
T. 45 S.
R. 58 W.
R. 59 W.

SEC. 6
IC Nos. 081/082 FWI

SEC. 2
IC Nos. 083/084 CLNC

SEC. 1
IC Nos. 081/082 FWI

SEC. 7
IC Nos. 081/082 FWI

TRACT A
LAND FILL

ANCSA 14(c) 2

ANCSA 14(c) 1

ANCSA 14(c) 3

USS No. 9965 2

TREE CUTTING PROHIBITED

PICNIC AREA

BOAT LANDING AREA

SEC. 12
IC Nos. 081/082 FWI

INDIAN CREEK (ANADROMOUS)

ANCSA 14(c) 4B

FAR WEST ADDITION

USS NO. 4896

BARGE & FERRY LANDING AREA

SUNKEN SHIP SITE

BOAT LANDING AREA

ANCSA 14(c) 6A

ANCSA 14(c) 7

HAWES CREEK (ANADROMOUS)

ANCSA 14(c) 6B & 6C

SEC. 11
IC Nos. 083/084 CLNC

ANCSA 14(c) 4A

APPROXIMATE LOCATION
Pwr Proj 620
R/W 100' wide

ANCSA 14(c) 14

ANCSA 14(c) 17

ANCSA 14(c) 5

SPRINGS AND SEEPAGE AREA

IC Nos. 081/082 FWI

SEC. 8
IC Nos. 081/082 FWI

HUNTING AND FISHING THROUGHOUT COMMUNITY

ENTIRE HILLSIDE DOWN TO WATERLINE IS SEEPAGE AND DRAINAGE AREA

ENTIRE COMMUNITY IS A SUBSISTENCE USE AREA

CHIGNIK CITY BOUNDARY

PAGE

SEC. 13
81/082

ANCSA 14(c) 13

APPROXIMATE LOCATION
Pwr Proj 620
R/W 200' wide

ANCSA 14(c) 15

DAM

SEC. 18
IC Nos. 081/082 FWI

SEC. 17
IC Nos. 081/082 FWI

SEC. 16
IC Nos. 081/082 FWI

SEC. 15
IC Nos. 081/082 FWI

SEC. 10
IC Nos. 081/082 FWI

SEC. 36
IC Nos. 081/082 FWI

SEC. 31

SEC. 3
IC Nos. 081/082 FWI

SEC. 4
IC Nos. 081/082 FWI

SEC. 5
IC Nos. 081/082 FWI

SEC. 9
IC Nos. 081/082 FWI

IC Nos. 1295/1296

TRACT V Parcel B

DRAINAGE AREA

CHIGNIK AIRPORT

TRACT I

AIRPORT LAKE

PICNIC AREAS

TRACT III

SUNKEN SHIP SITE

BOAT LANDING AREA

SMALL BARGE LANDING AREA

USS NO. 575

TRACT II

USS NO. 2151

BOAT LANDING AREA

TRACT IV

TR IV

ALASKA PACKERS SUBDIVISION #2

NEW SMALL BOAT HARBOR

USS NO. 1420

CHIGNIK HEIGHTS SUBDIVISION

USS NO. 307

USS NO. 1423

ANCSA 14(c) 10

BOAT LANDING AREA

USS NO. 306

ANCSA 14(c) 8

Magnetic North 18 1/2° E

True North

Legend & Notes

WINTER GLACIATION

DRAINAGE PROBLEM AREAS

MAP NOTES

This map was prepared by the Lake and Peninsula Borough (LPB) in cooperation with the Alaska Department of Community and Economic Development (DCED) using funding from the Coastal Impact Assistance Program, Coastal Management Program, Bureau of Indian Affairs Transportation Planning and funding from the Initiative for Accelerated Infrastructure Development (IAID). The IAID is supported by grants from the Denali Commission, USDA Rural Development, Alaska Department of Transportation and Public Facilities and DCED. The Alaska Native Tribal Health Consortium provided sanitation facility records. The LPB contracted with Global Positioning Services Incorporated in June of 2002 to prepare the map.

AREA USE MAP
CHIGNIK

56° 17' 40" N 158° 24' 30" W (NAD 83)
Approximate Elevation: 15'
Township 45 South, Ranges 58 and 59 West, S.M., AK
U.S.G.S. Quadrangle "CHIGNIK B-2," Alaska
ALEUTIAN ISLAND RECORDING DISTRICT

SEE SHEET 1 FOR DETAILED COMMUNITY MAP

0 800 1600 2400
SCALE IN FEET

SCALE: 1"=800'
Date of Photography: July 31, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

SHEET 4 of 4

CHIGNIK AREA USE MAP SHEET 4 1"=800' (2002 PHOTOGRAPHY)

MITIGATION ACTION TYPES AND EXAMPLES

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built	• Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP Community Rating System • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and Infrastructure Projects	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of action are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	• Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protections	These are actions that minimize damage and losses and also reserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas • StormReady • Firewise Communities
Emergency Response Actions	These are actions to identify emergency response or operational preparedness.	• Create mutual aid agreements with neighboring communities to meet emergency response needs • Purchase radio communications equipment • Develop procedures for notifying citizens of available shelter locations during an event

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
1	Build the capacity of the Tribe to prepare, respond to, and recover from disasters.	**1.A**	Acquire and place communication devices on each side of the Community at public locations such as the City office, Tribal office, clinic, and others.
		1.B	Acquire emergency supplies such as food, water, medical supplies, and other needs for the Community.
		1.C	Update the Community emergency plan and Small Community Emergency Response Plan (SCERP)
		1.D	Post emergency contact numbers for surrounding communities, local entities, and the region around the Community.
		1.E	Provide a checklist for emergency kits for personal/family kits.
2	Reduce the possibility of damages due to avalanches.	**2.A**	Install avalanche warning signs in areas that experience avalanches.
		2.B	Develop an avalanche warning system for the Community.
		2.C	Identify alternative routes for transportation to get to the airport, clinic, school, post office, gas station, boat harbor, and residential homes.
		2.D	Preform controlled avalanches.
3	Reduce the possibility of damages due to earthquakes.	**3.A**	Educate residents about securing bookshelves and other items to walls to prevent from toppling during an earthquake.
		3.B	Educate residents about having personal emergency kits for household members.
		3.C	Update and/or replace water/sewer distribution infrastructure and associated equipment.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
4	Reduce the possibility of damages due to erosion.	**4.A**	Design and construct a seawall, dike, or breakwater as appropriate and acquire needed materials.
		4.B	Conduct inspections and repairs as needed on Indian Creek Bridges which is the evacuation route.
		4.C	Keep extra culverts available for repairs.
		4.D	Conduct culvert repairs as needed.
5	Reduce the possibility of damages due to extreme cold.	**5.A**	Provide education for residents on how to install and inspect heat tapes.
		5.B	Add chemical to fuel to prevent from gelling.
		5.C	Educate residents, especially new residents, about hiking safety.
		5.D	Post fliers about animal safety and winter traveling in the Community.
		5.E	Provide education about boat safety and water travel for residents.
6	Reduce the possibility of damages due to floods.	**6.A**	Build up Anderson Road.
		6.B	Maintain or improve drainage as needed throughout the Community.
		6.C	Lift HUD homes, the clinic, and other structures as needed.
		6.D	Construct future structures on pilings, and work with agencies to better understand how to build for local conditions.
		6.E	Acquire and supply sandbags for residential homes and public buildings to help with flooding issues.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
7	Reduce the possibility of damages due to landslides.	**7.A**	Install "Falling Rocks" signs around landslide prone areas.
		7.B	Research best solution to handle falling rock.
		7.C	Improve emergency response by training more people on emergency response procedures.
		7.D	Develop a warning system for landslides.
8	Reduce the possibility of damages due to severe wind.	**8.A**	Move the spare generator to the clinic.
		8.B	Maintain and repair power poles when leaning and as needed.
		8.C	Educate residents about securing roofs and loose debris around their homes.
		8.D	Educate residents about covering windows, especially those that are exposed to southern winds.
		8.E	Educate residents on the importance of having a spare generator and fuel for their homes.
		8.F	Educate residents on marine safety, particularly about tying up boats, and secureing crab pots.
9	Reduce the possibility of damages due to severe winter weather.	**9.A**	Develop a regular inspection routine for power lines and ensure power lines are secured and not leaning.
		9.B	Educate residents about the importance of having chains for vehicles.
		9.C	Provide ice cleats for residents.
		9.D	Build new structures with extra insulation.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
10	Reduce the possibility of damages due to tsunamis.	**10.A**	Build a Tsunami shelter on both sides of the Community.
		10.B	Install "Evacuation Route" signs throughout the Community.
		10.C	Acquire spare parts for the tsunami siren.
		10.D	Train local individuals to repair the tsunami siren.
		10.E	Maintain and improve the evacuation route.
		10.F	Add evacuation route maps in all public buildings.
		10.G	Develop a plan to move people to higher ground during natrual hazards and acquire a Community bus.
		10.H	Schedule and hold regular test tsunami evacuations.
11	Reduce the possibility of damages due to volcanos.	**11.A**	Supply of masks at the clinic for residents and special masks for residents with respiratory issues.
		11.B	Acquire spare filters for Community generators.
		11.C	Evaluate the best way to protect equipment during ash fall events.
		11.D	Educate the Community about the impacs of ash fall on equipment and how to care for the equipment.
		11.E	Provide general volcano education to residents and proper mask placement.
		11.F	Provide education to residents with respiratory issues about the need for special masks.
		11.G	Improve communication with Alaska Volcano Observatory (AVO).
		11.H	Educate residents of the importance to have prescribed medication accessible.
		11.I	Provide education on valcanoes and specific associated hazards.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
12	Reduce the possibility of damages due to wildfires.	**12.A**	Acquire a brush trimmer attachment and Cut brush throughout the Community.cutting brush (brush cutter - TTP funds)
		12.B	Educate the Community about fire barriers around homes.
		12.C	Ensure there is a current volunteer firefighter group and that volunteers are trained.
		12.D	Maintain fire equipment and fire hydrants. Update equipment as needed and replace hoses.
		12.E	Place extinguishers around the Community, and develop an inspection schedule.
		12.F	Identify a safe building for residents on both sides of the Community during an emergency, such as the school, community hall, and clinic.
		12.G	Provide education to residents about proper burning procedures and the use of burn barrels.

INSTRUCTIONS - MITIGATION ACTION EVALUATION WORKSHEET

Use this worksheet to help evaluate and prioritize each mitigation action that is going to be implemented in the Mitigation Action Plan. For each action, evaluate the potential benefits and / or likelihood of successful implementation for the criteria defined below.

Rank each of the criteria with a -1, 0 or 1 using the following scale:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

EVALUATION CRITERIA

Life safety – How effective will the action be at protecting lives and preventing injuries?

Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?

Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.

Political – Is there overall public support for the mitigation action? Is there the political will to support it?

Legal – Does the community have the authority to implement the action?

Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Administrative – Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

Local Champion – Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?

Other Community Objectives – Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

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Mitigation Action Evaluation Worksheet

Mitigation Action ID	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
1.A	1	0	1	0	1	0	1	1	1	1	7
1.B	1	0	1	1	1	0	1	1	1	1	8
1.C	1	1	1	1	1	0	1	1	1	1	9
1.D	1	0	1	1	1	0	1	1	1	1	8
1.E	1	0	1	1	1	0	1	1	1	1	8
2.A	1	1	1	0	1	0	1	0	1	0	6
3.A	1	0	1	1	1	0	1	1	1	0	7
3.B	1	0	1	1	1	0	1	1	1	0	7
3.C	0	1	1	0	1	1	0	0	1	1	6
4.A	1	1	1	1	1	1	1	-1	0	0	6
4.B	1	1	1	0	1	0	0	1	1	1	7
4.C	0	0	1	0	0	0	0	1	1	1	4
5.A	1	1	1	0	0	0	0	1	0	0	4
5.B	0	1	1	0	0	0	0	1	0	0	3
5.C	1	0	0	0	0	0	1	1	1	0	4
6.A	0	1	1	1	1	1	1	0	1	1	8
6.B	0	1	1	1	1	1	0	1	0	0	6
7.A	1	1	1	0	1	0	0	1	1	0	6
8.A	1	0	1	0	1	0	1	1	1	0	6
8.B	0	1	0	0	0	0	1	0	0	0	2

Mitigation Action Evaluation Worksheet (*continued*)

Mitigation Action ID	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
8.C	1	1	1	0	1	0	1	1	1	0	7
8.E	1	1	1	0	1	0	1	1	0	0	6
8.F	1	0	1	1	1	0	1	1	1	0	7
9.A	0	1	1	0	1	0	1	1	1	0	6
10.A	1	0	0	1	1	0	1	1	1	1	7
10.B	1	0	1	1	1	0	1	1	0	0	6
10.G	1	0	1	1	1	0	1	1	1	0	7
10.H	1	0	1	1	1	0	1	1	1	1	8
11.A	1	0	1	1	1	0	1	1	1	0	7
11.F	1	0	1	1	1	0	1	1	1	0	7
11.H	1	0	1	0	1	0	1	1	0	0	5
11.I	1	0	1	1	1	0	1	1	0	0	6
12.A	1	1	1	1	1	0	1	1	0	0	7
12.C	1	0	1	1	1	0	1	1	1	0	7
12.D	1	1	1	1	1	0	1	1	1	0	8

*Source: Local Mitigation Planning Handbook, FEMA, March 2013, Worksheet 6.1

APPENDIX B

Public Involvement

- Public Meeting Comments
- Public Meeting Sign-In Sheet
- Public Meeting Flyer
- Public Meeting Handout
- Public Meeting Presentation
- Community Survey
- Community Survey Response Summary
- Newsletter #1 and Fax Transmittal
- Stakeholder Email
- Newsletter #2
- Letter to State Representative
- Letter to Senator

Bristol
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TRIP REPORT & MEETING MINUTES

Project: **BBNA THMP Project**
Bristol Project No: 32190013
Reference: Chignik Bay Planning Team Meetings & Public Meetings
Date of Meeting: April 24-25, 2019
Location of Meeting: Chignik Bay School
Participants:
Bristol: Danielle Dance, Taylor Turney
Planning Team: See attached sign in sheet
Public Meeting: See attached sign in sheet

Summary

Taylor and Danielle arrived in Chignik Bay around 1:00 PM on Thursday, April 25th, 2019. From 6:00 PM to 7:30 PM, they hosted a public meeting in the School Gym to discuss the THMP project and participate in a community potluck. They discussed the items for the Hazard Mitigation Plan including community assets, vulnerability statements, mitigation goals, and potential mitigation strategies while collecting public comment. They stayed overnight in the City owned Chignik Biltmore Lodging. In the morning, they met with 2 members of the planning team from 9:00 AM to 11:30 AM before leaving Chignik Bay at 12:45 PM.

THMP Public Meeting Notes

Community meeting

- Safety minute – Let family member know travel plans when leaving to hunt, fish, etc.
- 1964 Earthquake – Didn't have TV, plane flew over to warn and they listened to radio for tsunami warnings and effects
- Weren't effected by the November 2018 earthquake
- When the last earthquake hit, the cell service went out, and people TV's were the only way they found out. They didn't have communication devices to let parents know what was going on with their kids. No cell service at muster point.
- Mount Veniaminof went off, had to get masks for kid and distribute, health aids passed out masks, educated residents on how to use
- Passed out water during the ashfall event
- Health aid was worried that driving her car around to treat residents would damage her car
- Community didn't have infant masks
- Nobody has a place to go in event of tsunami, need a tsunami shelter
- Severe wind, tin was ripped off of roofs, schoolhouse had leaking, stuff hits windows
- Flying debree from worn out houses and stuff

- Landslide/avalanche occurred – shop was taken out, boats, blocked the creek, flooding occurred
- Avalanche blocked road for a road and didn't have access to planes, medications, generators, supplies
- The hill for tsunami warnings, bridge access to the muster point was wiped out during flooding
- Ash and avalanche could take out power plant
- MITIGATION ACTIONS
- Sub regional clinic- runway lights for nighttime evacuation
- Geotech/soil report
- They have tsunami monitor at harbor
- Updating water and sewer lines
- Sometimes get low water pressure due to leaks
- Have some wooden pipes
- Elders would head for high lands when animals became distressed (dogs went to higher ground during the earthquake)
- Education on volcanos and hazards associated
- Checklist for emergency kit in personal kits and community wide
- Community bus for people without or plan to get them
- Phone tree/communication plan for emergencies
- Practice tsunami evacuation
- Boating safety education
-

INVOLVEMENT

- Group Meetings
- Flyers in community places
- Emails
- Contact person for questions regarding hazards
- FEMA youth education material

THMP Planning Team Meeting Notes

- See attached sheet of information regarding asset estimated values and contact information to collect additional asset estimated values.

Attachments:

1. Asset Estimated Value Contact Information
2. Public Meeting Sign-in Sheet
3. Public Meeting Flyer
4. Public Meeting Handouts
5. Public Meeting Presentation Slides
6. Map Corrections

End Meeting Minutes

CC: File

Community Meeting

Chignik Bay Tribal Hazard Mitigation Plan (2019 - 2024)
Date / Location: April 25, 2018 at 6 PM / Community Hall

Sign In Sheet

Name	Name	Name
Alex Flinders	Shaun Kalmakoff	
Peter Andoson	Sonya Anson	
Trevin Andoson	Cesar Anson	
Brendan Orloff	Madison Anson	
JJ Orloff	Andrew Anderson	
Kelsin Orloff	James Anderson	
Edward Krause	Rosanna McArthur	
Edward Krause Jr	*Brendan Orloff	
Billy Andersson	Kelsin Orloff	
* Alana Andersson	Robert Carpenter	
Nate McArthur		
Xann McArthur		
Daril cottam		
Elisabeth Ludwig		
Jon Ludwig		
Matilda Ludwig		
Guy Ashby		

Photo Credit: *Bristol Bay Regional Vision Project* , www.lpsd.com

CHIGNIK BAY FEMA TRIBAL HAZARD MITIGATION PLAN

COMMUNITY MEETING

Come learn about Chignik Bay Tribal Council FEMA Tribal Hazard Mitigation Plan. The Plan identifies the natural hazards that impact your community, such as wildfires, floods, earthquakes, & more. It also proposes strategies to protect the community against future impacts from these natural hazards.

We want to hear from you!

Attendees will have an opportunity to provide their experiences on how these hazards have impacted the community, and share ideas on ways to reduce future impacts from these hazards. The project planners will be available for any questions or feedback from the public.

Posting date 4/9/2019

Thursday
April 25, 2019
6 PM

Community Hall

Door Prizes!

Snacks & Refreshments

Provide input about natural hazards in Chignik Bay!

For more information:

Danielle Dance
(907) 563-0013
ddance@bristol-companies.com

Bristol

ENGINEERING SERVICES COMPANY, LLC

Bristol
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SERVICES COMPANY, LLC

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Community Meeting for
Chignik Bay Tribal Hazard Mitigation Plan

April 25, 2019

Dear Participant;

Thank you for attending the public meeting for the Chignik Bay FEMA Tribal Hazard Mitigation Plan (THMP). Your comments and participation are very important to the planning process. We appreciate any feedback you may have on this meeting or the project in general.

Bristol Bay Native Association (BBNA) Department of Transportation and Infrastructure Development (DOTID) has contracted Bristol Engineering Services Company, LLC (Bristol) to assist with the preparation of the FEMA THMP. The THMP is a planning document used to identify hazards that your community is exposed to and ways to reduce potential losses of important assets from these hazards. A FEMA approved and community adopted THMP enables the Local government to apply for grants through disaster related assistance programs like the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and others.

The purpose of this public meeting is to inform the community about the THMP, collect community feedback about the identified hazards and mitigation actions / projects. We are looking for personal experiences with the identified hazards, and assistance with identifying problem areas and issues of concern. We would also like input on the identified mitigation strategies and ways that the Planning Team can keep the public informed and involved in the process. This information will be used in the THMP. A draft copy will be available for review when completed.

Public comment is key to a successful project. Please feel free to contact me directly with any comments or concerns. My email is ddance@bristol-companies.com.

Sincerely,

Danielle Dance
Civil Engineer I

Attachments:
- Newsletter
- List of Preparedness Resources
- 12 Ways to Prepare Postcard

Bristol Bay Native Association
Transportation and Infrastructure Development

August 2018 Newsletter 1

This newsletter describes the Bristol Bay Native Association Transportation and Infrastructure Department's Tribal Hazard Mitigation Planning project development processes to all interested agencies, stakeholders, and the public and to solicit comments. It can also be viewed on the BBNA's website at www.bbna.com

Bristol Bay Native Association (BBNA) Transportation and Infrastructure Department (DOTID) was awarded a Pre-Disaster Mitigation Program grant from the Federal Emergency Management Agency (FEMA) to prepare your 2019 Tribal Hazard Mitigation Plan (THMP). Bristol Engineering Services Company, LLC (BESC) was contracted to assist the BBNA DOTID with preparing a 2019 FEMA approvable THMP plan.

The TMP will identify all natural hazards, such as earthquake, flood, erosion, severe weather, and wildland/tundra fire hazards, etc. The plan will also identify the people and facilities potentially at risk and ways to mitigate damage from future hazard impacts. We will document the public participation and planning process as part of this project.

What is Hazard Mitigation?
Hazard mitigation projects eliminate the risk or reduce the hazard impact severity to people and property. Projects may include short- or long-term activities to reduce exposure to or the effects of known hazards. Hazard mitigation activities could include relocating or elevating buildings, replacing insufficiently sized culverts, using alternative construction techniques, developing, implementing, or enforcing building codes,or developing, and implementing education programs.

Why Do We Need A Hazard Mitigation Plan?
Communities must have a State, FEMA approved, and community adopted mitigation plan to receive a project grant from FEMA's pre- and post- disaster grants identified in their Hazard Mitigation Assistance and other agency's mitigation grant programs. BBNA DOTID plans to apply for mitigation funds after our plan is complete.

A FEMA approved and community adopted THMP enables the Local government to apply for the Hazard Mitigation Grant Program (HMGP), a disaster related assistance program; the Pre-Disaster Mitigation (PDM), and the National Flood Insurance Program (NFIP) Flood Mitigation Assistance (FMA) grant programs.

The Planning Process
There are very specific federal requirements that must be met when preparing a FEMA approvable THMP. These requirements are commonly referred to as the planning process requirements of 44 CFR 201.7 (c)

The following steps describe the planning process in order to develop the THMP.

1. **Establish the Planning Team**
2. **Education of the Planning Team**
3. **Assess Risks**
4. **Assess Capabilities**
5. **Develop a Mitigation Strategy**
6. **Monitor, Evaluate, and Plan Updates**

We are currently in the very beginning stages of preparing the plan development. We will be conducting a Planning Team Meeting to introduce the project and planning team, to gather comments from community residents, identify hazards, and collect data to refine the vulnerability assessment.

We Need Your Help

BESC has prepared survey packets to begin collecting information for your THMP. Survey packets will be mailed to your village council and sent by email to your village administrator.

Establishing a Planning Team is a very important step. We will need a point of contact (POC)/team leader from your community. This group will consist of 2-5 people that have good knowledge about land use, the transportation system, public facilities, and safety resources within the community. BBNA DOTID will be in contact with your tribe to determine a POC and your planning team.

Once the Planning Team has been developed, they will begin to work on the following items:

- Identifying the hazards that impact your community;
- Determining information about the hazards such as, location, history, extent, and the probability of future events;
- Completing a risk analysis, and;
- Developing problem statements and goals.

BBNA DOTID will be in contact with your tribe to set up an initial teleconference meeting with the Planning Team, BBNA DOTID, and BESC to continue to work on the THMP development.

The BBNA DOTID team will be led by Annie Fritze, DOTID Program Manager or Dan Breeden, Department Director with assistance from Bristol Engineering Service Company, LLC (contracted by BBNA). BESC will be developing materials and lead the planning process with guidance from BBNA DOTID staff.

BBNA Tribal Hazard Planning Team

Team Member	Title	Involvment
Annie Fritze	Program Manager	THMP Team Leader, data gathering and plan review
Dan Breeden	Department Director	THMP Team Leader, data gathering and plan review
Isaac Pearson, P.E.	Senior Engineer	THMP Consultant
Danielle Dance	Civil Engineer	THMP Consultant

Public Participation

The purpose of this newsletter is to keep you informed, and to allow you every opportunity to voice your opinion regarding these important projects. We want to encourage public involvement as a continuous effort throughout the project.

We encourage you to take an active part in the development effort, and preparation of the Tribal Hazard Mitigation Plan.

The goal is to receive comments, identify key issues or concerns, and improve mitigation ideas, and to guide the community.

Please contact BBNA DOTID program staff or BESC if you have any questions, comments, or requests for more information:

Bristol Bay Native Association DOTID	**Bristol Engineering Services Company, LLC**
Annie Fritze OR **Dan Breeden** **PO Box 310** **Dillingham, Alaska 99576** **(907) 842-6219**	**Danielle Dance, Consultant** **111 W. 16th Avenue, Third Floor** **Anchorage, Alaska 99501** **(907)563-0013**

Useful web links

Volcano Information

- Visit the AVO website: www.avo.alaska.edu
- Sign up for the VNS: https://volcanoes.usgs.gov/vns2/
- Ash Impacts website: https://volcanoes.usgs.gov/volcanic_ash
- Ashfall advisories come from the NWS: www.weather.gov/afc/
- AVO would *love* your volcano observations and ash samples
    - *Find us at www.avo.alaska.edu/contact.php/*
    - *Is Ash Falling: www.avo.alaska.edu/ashfall/ashreport.php*
    - *Collection instructions: https://avo.alaska.edu/ashfall.php*
    - *Facebook: http://facebook.com/alaska.avo*
    - *Twitter: http://twitter.com/alaska_avo*
- Air Quality Advisories, DEC: http://dec.alaska.gov/air
- Airborne ash hazards to aircraft, NOAA: http://aawu.arh.noaa.gov
- Local Notice to Mariners, USCG: www.navcen.uscg.gov

Weather Information

- Watches and Warnings: https://alerts.weather.gov/cap/ak.php?x=1
- Any forecast: http://www.weather.gov/afc
- Mobile information (low bandwidth): http://www.weather.gov/source/afc/mobile/
- River Information: http://www.weather.gov/aprfc
- Rainfall: http://www.weather.gov/aprfc
- Breakup Info: http://www.weather.gov/aprfc/breakupESRIMap
- River Conditions: http://www.weather.gov/aprfc/riverConditions
- Alaska Weather T.V. Maps: http://www.weather.gov/afc/tv
- Sea Ice forecasts: http://www.weather.gov/afc/ice
- Outlook (temperatures and precipitation): http://www.cpc.noaa.gov
- Send us a storm report: http://www.srh.noaa.gov/StormReport_new/SubmitReport.php?site=AFC

WEBSITES

- Alaska DHS&EM: http://ready.alaska.gov
- Ready, Department of Homeland Security: https://www.ready.gov/
- Department of Commerce, Community and Economic Development (DCCED), State of Alaska Floodplain Management: http://www.commerce.state.ak.us/dca/nfip/nfip.htm
- Flood information for Alaskans: http://www.flood.alaska.gov
- Association of State Floodplain Managers: http://www.floods.org/
- Alaska-Pacific River Forecast Center (APRFC): http://aprfc.arh.noaa.gov
- Natural Resources Conservation Service (NRCS), Alaska Snow, Water and Climate Services: http://ambcs.org
- National Weather Service (NWS), Alaska Region Headquarters: http://www.arh.noaa.gov/
- Federal Aviation Administration (FAA), Alaskan Region's Weather Cameras: http://avcams.faa.gov/
- U.S. Department of the Interior—Bureau of Land Management (BLM), Alaska Fire Service: http://fire.ak.blm.gov/
- Alaska Energy Authority (AEA): http://www.akenergyauthority.org/
- Department of Commerce, Community and Economic Development (DCCED), Community Profiles: http://www.commerce.state.ak.us/dca
- Alaska Department of Public Safety, Rural Fire Training Office: http://www.dps.state.ak.us/fire/TEB/ruralfireprotection.aspx
- Department of Environmental Conservation (DEC): http://www.state.ak.us/dec/
- National Weather Service, Forecast Office Alaska Ice Desk: http://pafc.arh.noaa.gov/ice.php
- Federal Emergency Management Agency (FEMA): http://www.fema.gov/
- American Red Cross of Alaska: http://www.alaska.redcross.org
- Small Business Administration: http://www.sba.gov/localresources/disasteroffices/focwest/index.html


TAKE ACTION
AND
PREPARE
FEMA
FEMA V-1021
Catalog No. 1872-3
April 2018
There are many ways to take action and prepare before a disaster occurs. The actions on this card include some of the most important ways to help yourself, your family, and your community increase your preparedness. Simple actions at home and in your neighborhood can make a big difference!
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@Readygov
Facebook.com/readygov
Fema.gov/mobile-app
Ready.gov/prepare


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Facebook.com/readygov
Fema.gov/mobile-app
Ready.gov/prepare

12 WAYS TO PREPARE

- ☐  Sign up for Alerts and Warnings
- ☐  Make a Plan
- ☐  Save for a Rainy Day
- ☐  Practice Emergency Drills
- ☐  Test Family Communication Plan
- ☐  Safeguard Documents
- ☐  Plan with Neighbors
- ☐  Make Your Home Safer
- ☐  Know Evacuation Routes
- ☐  Assemble or Update Supplies
- ☐  Get Involved in Your Community
- ☐  Document and Insure Property

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- ☐  Document and Insure Property

Bristol

Chignik Bay Tribal Council
Public Meeting
April 25, 2019

Chignik Bay FEMA Tribal Hazard Mitigation Plan

Bristol Engineering Services Company, LLC
Danielle Dance & Taylor Turney

Bristol

Chignik Bay Tribal Council
Public Meeting
April 25, 2019

Safety Minute

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Chignik Bay Tribal Council
Public Meeting
April 25, 2019

Presentation Overview

- Project Background
- FEMA Tribal Hazard Mitigation Plan (THMP)
- Funding
- Identified Hazards
- Assets
- Mitigation Goals
- Mitigation Action Plan

U.S. Army Corps of Engineers *Alaska District*
Alaska Baseline Erosion Assessment
Erosion Information Paper – Chignik Bay, Alaska
December 17, 2008

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Chignik Bay Tribal Council
Public Meeting
April 25, 2019

Project Background

- BBNA DOTID awarded Pre-Disaster Mitigation Program grant from FEMA
  - Develop the Tribal Hazard Mitigation Plan
  - Contracted BESC
- Hazard Mitigation
  - eliminates risk to or reduces hazard impact severity to community assets
  - Projects can be long or short term
- Purpose of Plan
  - Identify ways to make community safer and more prepared
  - Provides opportunity for funding options through FEMA

Bristol Bay Native Association

Bristol ENGINEERING SERVICES COMPANY, LLC

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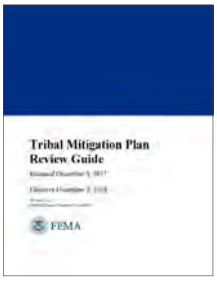
Public Meeting
April 25, 2019

FEMA Tribal Hazard Mitigation Plan (THMP)

- Follows Code of Federal Regulations (CFR)
  - 44 CFR Part 201
- Identifies
  - Planning Process / Planning Team
  - Plan to keep the THMP current
  - Natural hazards in your community
  - Community assets
  - Mitigation strategy / action plan
  - Funding Opportunities



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Funding

- Eligibility Requirement for FEMA Pre- and Post- Disaster Grants
  - FEMA approved and community adopted Hazard Mitigation Plan
    - Plan identifies mitigation projects for the community
- Grants
  - Hazard Mitigation Grant Program (HMGP)
  - Pre-Disaster Mitigation (PDM)
  - National Flood Insurance Program (NFIP)
  - Flood Mitigation Assistance (FMA)
- Other Grant Opportunities
  - State
  - Tribal

Lake and Penninsula Borough
Multi-Jurisdictional Hazard Mitigation Plan Update
December 2015
Chignik Bay, Alaska – Flood 1985

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Identified Hazards

- Hazards Identified Based on
  - Location
  - Extent
  - Probability of Future Event
  - Overall Significance
- Hazards Detailed in Plan
  - Location
  - Extent
  - History
  - Probability of Future Events
- Hazards
  - Avalanche
  - Earthquake
  - Erosion
  - Extreme Cold
  - Flood
  - Landslide
  - Severe Wind
  - Severe Winter Weather
  - Tsunami
  - Volcano
  - Wildfire
- What experiences have you had?

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Community Assets

- Asset
  - People
  - Economy
  - Built Environment
  - Natural Environment
- Major Community Assets
  - City Office
  - Tribal Council Building
  - Church / Cemetery
  - School
  - Community Hall
  - Clinic
  - Post Office
  - Roads / Trails
  - Airport
  - Boat Harbor
  - Utilities
  - Others

U.S. Army Corps of Engineers *Alaska District*
Alaska Baseline Erosion Assessment
Erosion Information Paper – Chignik Bay, Alaska
December 17, 2008

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Mitigation Goals

- Goals Based on Vulnerability Statements
  - LIST VULNERABILITY STATEMENTS

FEMA Local Mitigation Planning Handbook
March 2013

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Public Meeting
April 25, 2019

Mitigation Goals

- Community Goals
  - Reduce possibility of damages due to:
    - Avalanche
    - Earthquake
    - Erosion
    - Extreme Cold
    - Flood
    - Landslide
    - Severe Wind
    - Severe Winter Weather
    - Tsunami
    - Volcano
    - Wildfire
  - Build the capacity of the Tribe to prepare, respond to, and recover from disasters.

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Public Meeting
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Mitigation Actions

- Mitigation Actions Reduce Long-Term Vulnerability
- Types
  - Local plans and regulations
  - Structure and infrastructure projects
  - Natural systems protection
  - Education and awareness programs
  - Additional – Preparedness and Response Actions
- Actions Will be Used to Create a Mitigation Action Plan

FEMA Local Mitigation Planning Handbook
March 2013

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Public Meeting
April 25, 2019

Mitigation Actions (Continued)

- Mitigation Actions
  - Place a communication device on each side of the Community
  - Update the Community SCERP and post emergency numbers around the Community
  - Provide education about having personal emergency kits
  - Improve drainage throughout the Community
  - Build a tsunami shelter
  - Ensure there is a current volunteer firefighter group and equipment
- What other suggestions do you have?

Photo Credit: Department of Commerce, Community and Economic Development; Division of Community and Regional Affairs' Community Photo Library.

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Public Meeting
April 25, 2019

Continued Public Involvement

- Public Involvement is Important
  - Next Steps
- How can the Planning Team keep you informed and involved in this process?

Contact	
BBNA DOTID	Bristol Engineering (BESC)
Annie Fritze (907) 842-6143 afritze@bbna.com	Danielle Dance (907) 563-0013 ddance@bristol-companies.com

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Questions or Comments

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April 25, 2019

Thank You!

Photo Credit: *Bristol Bay Regional Vision Project*, www.lpsd.com

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COMMUNITY SURVEY

This is a public opinion survey regarding natural hazards in your community. The results from this survey will help the Tribal Hazard Mitigation Plan Planning Team improve public/private coordination, mitigation, and risk reduction efforts in your community. Additionally we would like information regarding the methods and techniques you prefer for reducing the risks and losses associated with these hazards.

NATURAL HAZARD INFORMATION

We would like to know about your experience involving natural hazards and your exposure to preparedness information.

1. In the last five (5) years, have you or someone in your household directly experienced any of the natural disasters listed below?
(Please check all that apply)

- ☐ Coastal Ice
- ☐ Drought
- ☐ Earthquake
- ☐ Erosion
- ☐ Extreme Temperatures
- ☐ Flood
- ☐ Landslide/Avalanche
- ☐ Severe Winter Weather
- ☐ Tsunami
- ☐ Volcano Eruption
- ☐ Wildfire
- ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your community?
(Check the corresponding box for each hazard)

Natural Disaster	Very Concerned	Somewhat Concerned	Neutral	Not Very Concerned	Not Concerned
Coastal Ice	☐	☐	☐	☐	☐
Drought	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐
Erosion	☐	☐	☐	☐	☐
Extreme Temperatures	☐	☐	☐	☐	☐
Flood	☐	☐	☐	☐	☐
Landslide/Avalanche	☐	☐	☐	☐	☐
Severe Winter Weather	☐	☐	☐	☐	☐
Tsunami	☐	☐	☐	☐	☐
Volcano Eruption	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐

3. Have you received information about how to make members of your household and home safer from natural disasters?

- ☐ Yes
- ☐ No **(IF *NO* Skip to Question 5)**

If "YES", how recently?

- ☐ Within the last 6 months
- ☐ Between 6 and 12 months
- ☐ Between 1 and 2 years
- ☐ Between 2 and 5 years
- ☐ 5 years or more

4. Who provided the last received information about how to make members of your household and home safer from natural disasters?
(Please check only ONE)

- ☐ News Media
- ☐ Government Agency
- ☐ Utility Company
- ☐ University or Research Institution
- ☐ Tribe
- ☐ Neighbor / Friend / Family Member
- ☐ Non-Profit Organization
- ☐ Not Sure
- ☐ Other (specify): _____

5. What is the most effective way for you to receive information about how to make your household and home safer from natural disasters?
(Please check UP TO THREE)

- ☐ Newspapers
- ☐ Radio
- ☐ Schools
- ☐ Internet (News Outlets/Email Newsletters)
- ☐ Books
- ☐ Mail
- ☐ Fact Sheet / Brochure / Newsletters
- ☐ Public Workshops / Meetings
- ☐ Other (specify): _____

COMMUNITY VULNERABILITIES AND HAZARD MITIGATION STRATEGIES

We need to understand which community assets may be vulnerable to natural hazards in order to assess community risk. Vulnerable assets are those community features, characteristics, or resources that may be impacted by natural hazards (e.g. populations with functional needs, environmental resources, economic components, and others). The next set of questions will focus on the vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

6. Community assets are characteristics, features, or resources that either allow the community to function or make a community unique. In your opinion, which of the following categories are most vulnerable to the impacts caused by natural hazards in your community?
(Rank the community assets in order [from 1 to 6] of vulnerability, 1 being most vulnerable and 6 being least vulnerable)

Community Assets	Potential Natural Hazard Impact	Order of Vulnerability
Human	Loss of life and/or injuries	_____
Economic	Business closures and/or job losses	_____
Infrastructure	Damage or loss of bridges, utilities, schools, etc.	_____
Cultural / Historic	Damage or loss of fish dry racks, cemeteries, etc.	_____
Environmental	Damage or loss of forests, rangeland, waterways, subsistence areas, etc.	_____
Governance	Ability to maintain order and/or provide public amenities and services	_____

7. We would like to know what specific types of community assets are most important to you. **(Check the corresponding box for each hazard)**

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
School	☐	☐	☐	☐	☐
Clinic	☐	☐	☐	☐	☐
Churches	☐	☐	☐	☐	☐
City Buildings	☐	☐	☐	☐	☐
Tribal Buildings	☐	☐	☐	☐	☐
Store	☐	☐	☐	☐	☐
Post Office	☐	☐	☐	☐	☐
Transportation Systems	☐	☐	☐	☐	☐
Major Employers	☐	☐	☐	☐	☐
Fuel Storage	☐	☐	☐	☐	☐
Utilities	☐	☐	☐	☐	☐
Homes	☐	☐	☐	☐	☐
Subsistence Areas	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐
Other:_____	☐	☐	☐	☐	☐
Other:_____	☐	☐	☐	☐	☐
Other:_____	☐	☐	☐	☐	☐

8. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory.
(Check the corresponding box that best represents your opinion on how to best reduce the risk and loss associated with natural disasters.)

Strategies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
I support a planning and regulatory approach to reducing risk	☐	☐	☐	☐	☐	☐
I support a non-regulatory approach to reducing risk	☐	☐	☐	☐	☐	☐
I support a mix of both regulatory and non-regulatory approaches to reducing risk	☐	☐	☐	☐	☐	☐
I support structure and infrastructure projects to reduce risk	☐	☐	☐	☐	☐	☐
I support natural systems protection projects to reduce risk	☐	☐	☐	☐	☐	☐
I support education and awareness programs to reduce risk	☐	☐	☐	☐	☐	☐
I support protecting historical and cultural structures	☐	☐	☐	☐	☐	☐
I would be willing to make my home more disaster-resistant	☐	☐	☐	☐	☐	☐
I support steps to safeguard the local economy following a natural disaster	☐	☐	☐	☐	☐	☐
I support improving the disaster preparedness of local schools	☐	☐	☐	☐	☐	☐

9. Natural hazards can have a significant impact on a community. However, planning for these events can help reduce the impacts. The following statements will help determine community priorities regarding planning for natural hazards in your community.
(Check the corresponding box to show us how important each one is to you.)

Statements	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (e.g. roads, bridges, clinic, schools, store, etc.)	☐	☐	☐	☐	☐
Enhancing function of natural features (e.g. streams, wetlands)	☐	☐	☐	☐	☐
Protecting historical and cultural resources and landmarks	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services	☐	☐	☐	☐	☐

MITIGATION AND PREPAREDNESS ACTIVITIES IN YOUR HOUSEHOLD

Households can prepare and mitigate for natural hazards in order to prevent property damage, injuries, and loss of life. Any precautions taken or training received can make a big difference in your ability to recover from an emergency or natural disaster. Emergency care or access to basic services (e.g. electricity, gas, water, communications) may be temporarily cutoff. Or you may be asked to quickly evacuate. The following questions focus on your household's preparedness for natural hazards or emergencies.

10. Please check the activities that you have done in your household, plan to do in the near future, have not done, or are unable to do.
(Check one answer for each preparedness activity.)

Have you or someone in your household:	Have Done	Plan To Do	Not Done	Unable To Do
Attended a meeting or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with members in your household about what to do in case of an emergency or natural disaster?	☐	☐	☐	☐
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of an emergency or disaster?	☐	☐	☐	☐
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☐	☐

GENERAL HOUSEHOLD INFORMATION

We appreciate any information you are willing to share with us about you and/or your household.

11. Please indicate your age: _____

12. Gender **(Circle one)**: **Male** **Female**

13. How long have you lived in the community?

- ☐ Less than one (1) year
- ☐ 1 – 5 years
- ☐ 5 – 9 years
- ☐ 10 – 19 years
- ☐ 20 years or more

GENERAL COMMENTS

Please provide any additional comments about natural hazards in your community including historical disasters, existing efforts to prepare for or protect against a disaster, or comments about the Hazard Mitigation Plan Project in general.

Thank you for taking the time to complete this survey.

If you have any questions or comments, please contact **Danielle Dance** at **(907) 743-9394** or **ddance@bristol-companies.com**

SUMMARY - COMMUNITY SURVEY

A survey was distributed to the community members of Chignik Bay, Alaska. This was done in an effort to collect public opinion regarding natural hazards that impact the community and preferred methods of reducing risk and losses associated with these hazards. Below is a summary of the data collected from the survey.

GENERAL RESPONDENT INFORMATION

Nineteen questionnaires were completed and returned. Question 12 asked about the gender of the respondents. Six respondents were male, 12 female, and one declined to answer (See Figure 1). Question 13 asked about the length of time in the community. Seventy-six percent (13 replies) of the questionnaires came from longtime residents that have lived in the community for 20 or more years (See Figure 2).

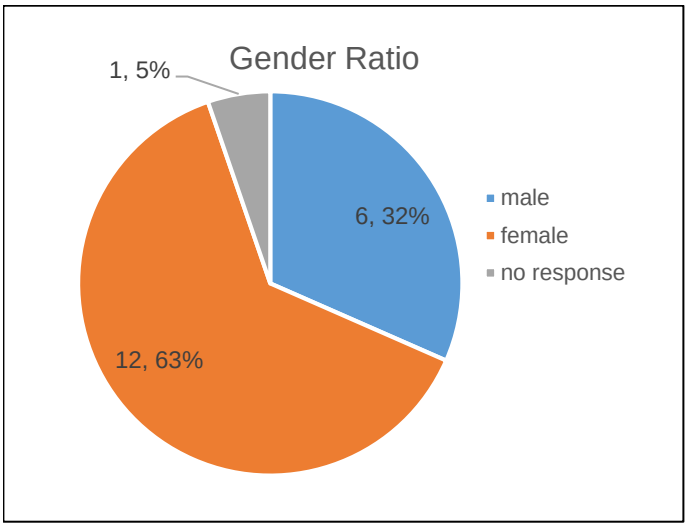

Figure 1: Gender Ratio (Question #12)

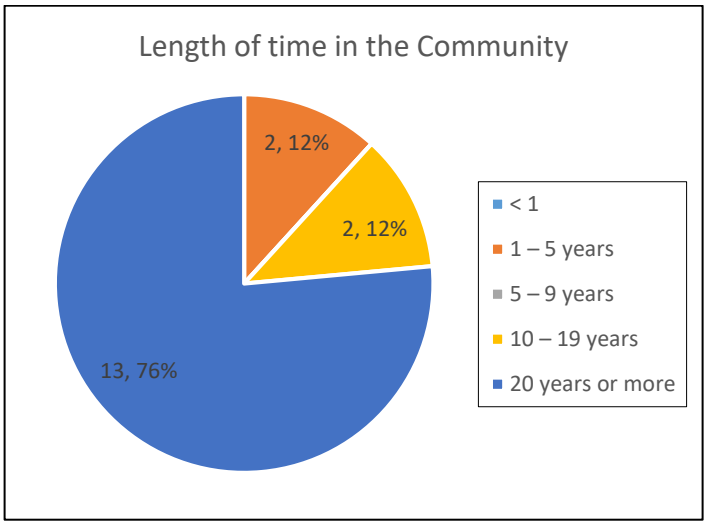

Figure 2: Length of Time in the Community (Question #13)

The residents that responded ranged in age (Question 11) from 24 to 87. Thirty-one percent of the respondents were over the age of 60 (See Figure 3).

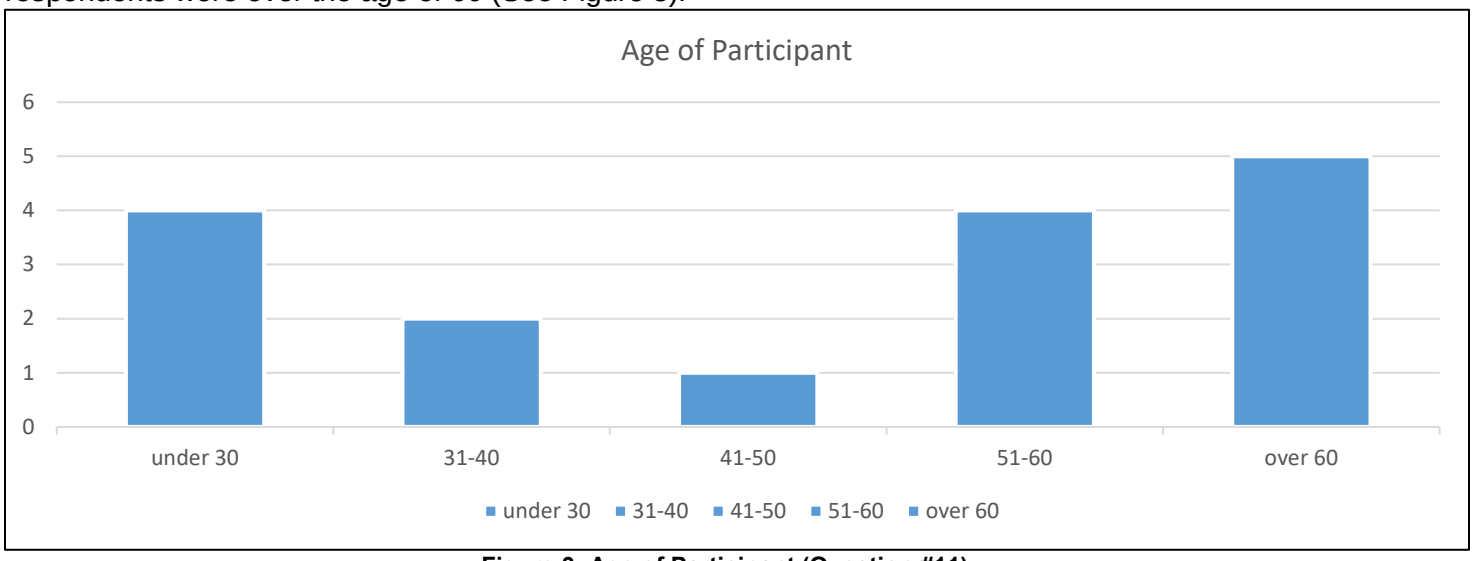

Figure 3: Age of Participant (Question #11)

NATURAL HAZARD INFORMATION

Information regarding experiences and concerns about natural hazards in the community was gathered (Question 1) from the survey. The survey respondents identified hazards that they have personally experienced (See Figure 4).

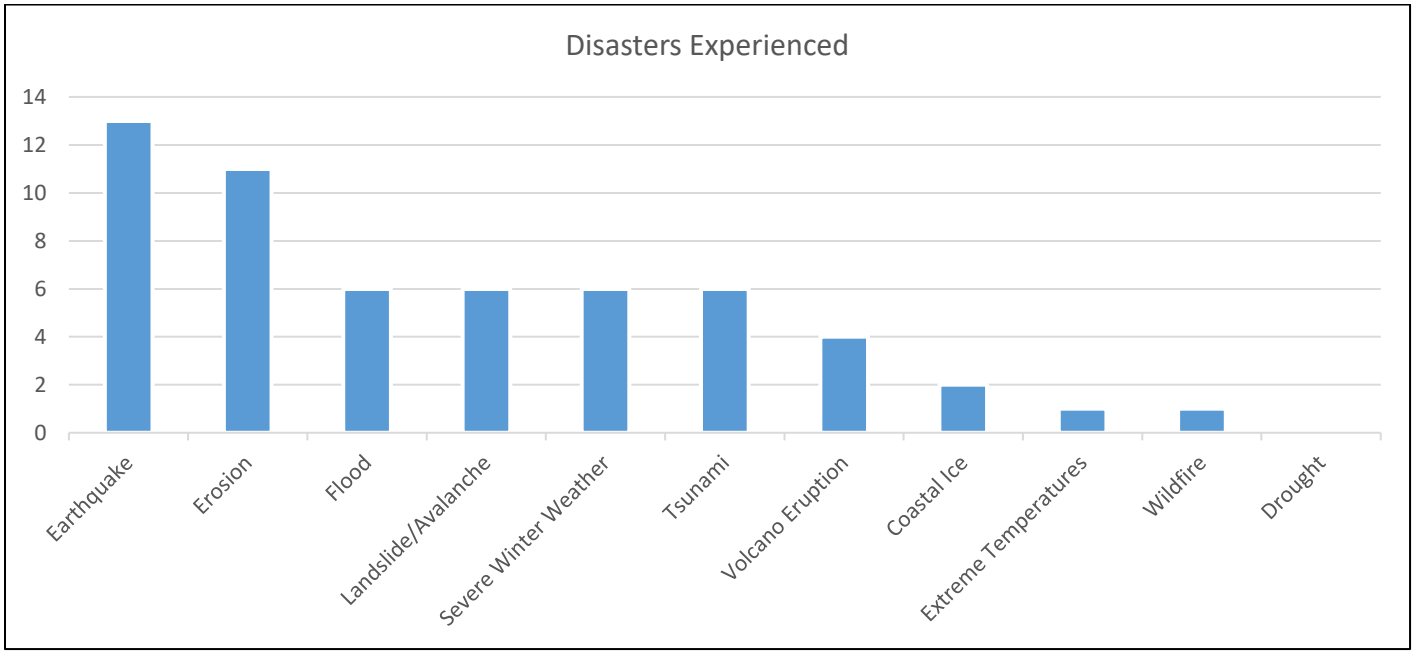

Figure 4: Disasters Experienced (Question #1)

Question 2 identified specific hazards that concerned the community members. The Community is most concerned about tsunamis. Seventeen individuals out of the 19 replies expressed they were somewhat or very concerned about tsunamis. Other disasters of concern are earthquakes, avalanches/landslides, and erosion. Figure 5 identifies the concerns for the Community.

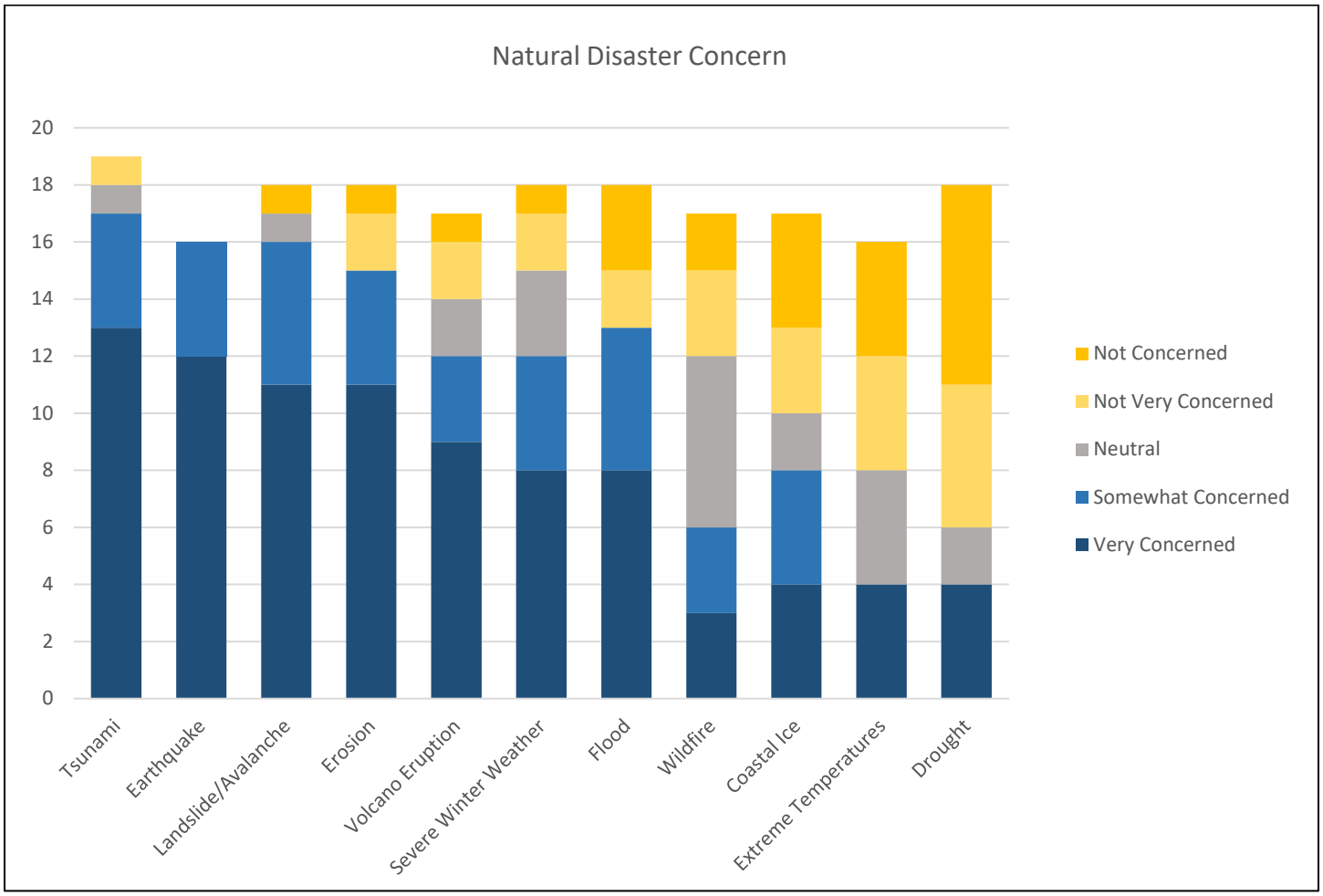

Figure 5: Natural Disaster Concern (Question #2)

The residents were asked if they received any information on how to make their homes and members of their household safe from a natural disaster (Question 3). Twelve respondents noted that they received information. Of those, three received information within the last six months, three received information within the last year, and two received information two to five years ago. Figure 6 indicates the source of the information obtained by the residents (Question 4) that said they received this information.

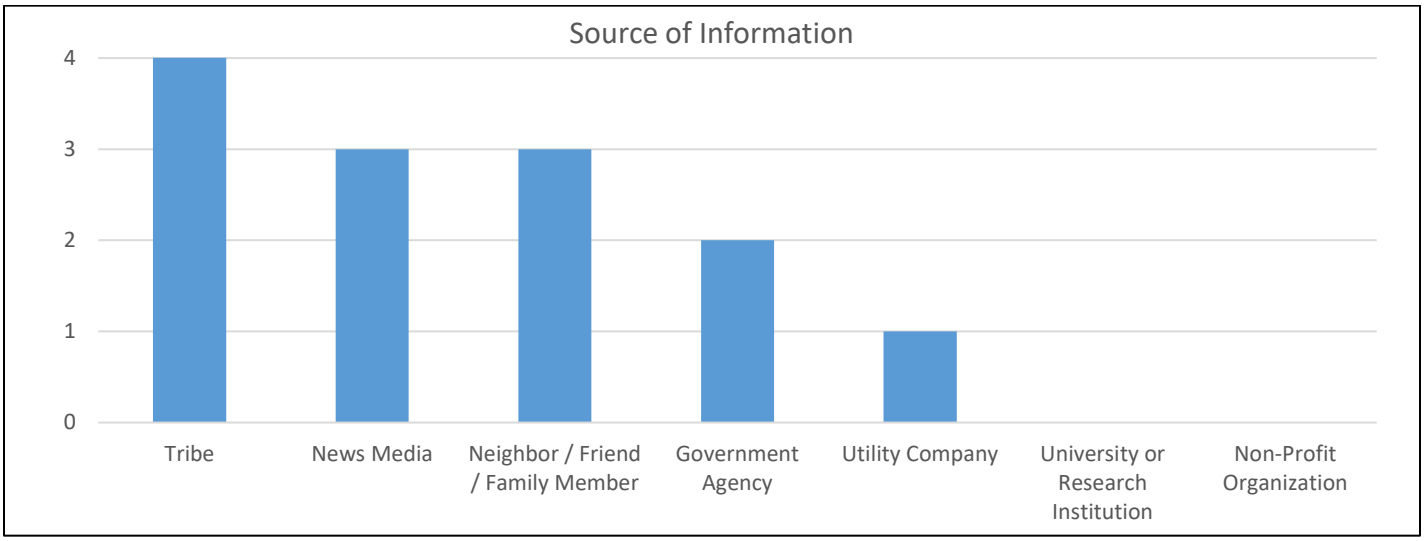

Figure 6: Source of Information (Question #4)

The residents were asked about the most effective way for them to receive information to protect their household and homes (Question 5). For those that responded this questions, internet and mail were considered the two most effective ways of receiving this information. Figure 7 provides the respondents preferred method of receiving information about how to protect their homes and households. Four respondents suggested telephone and one said television as preferred methods.

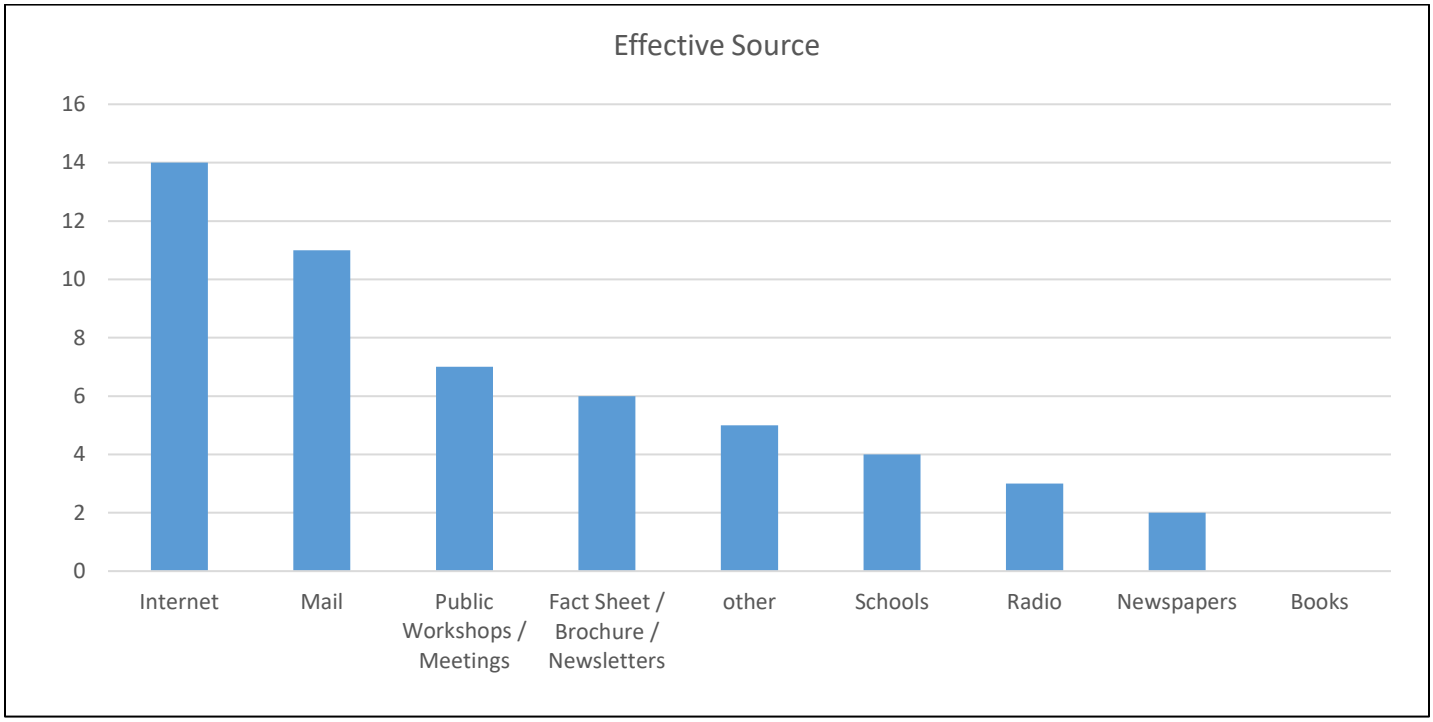

Figure 7: Effective Source (Question #5)

COMMUNITY VULNERABILITIES AND HAZARD MITIGATION STRATEGIES

The residents were asked to identify the categories of community assets that were most vulnerable to natural hazards (Question 6). Figure 8 portrays the opinions of those that responded to the survey.

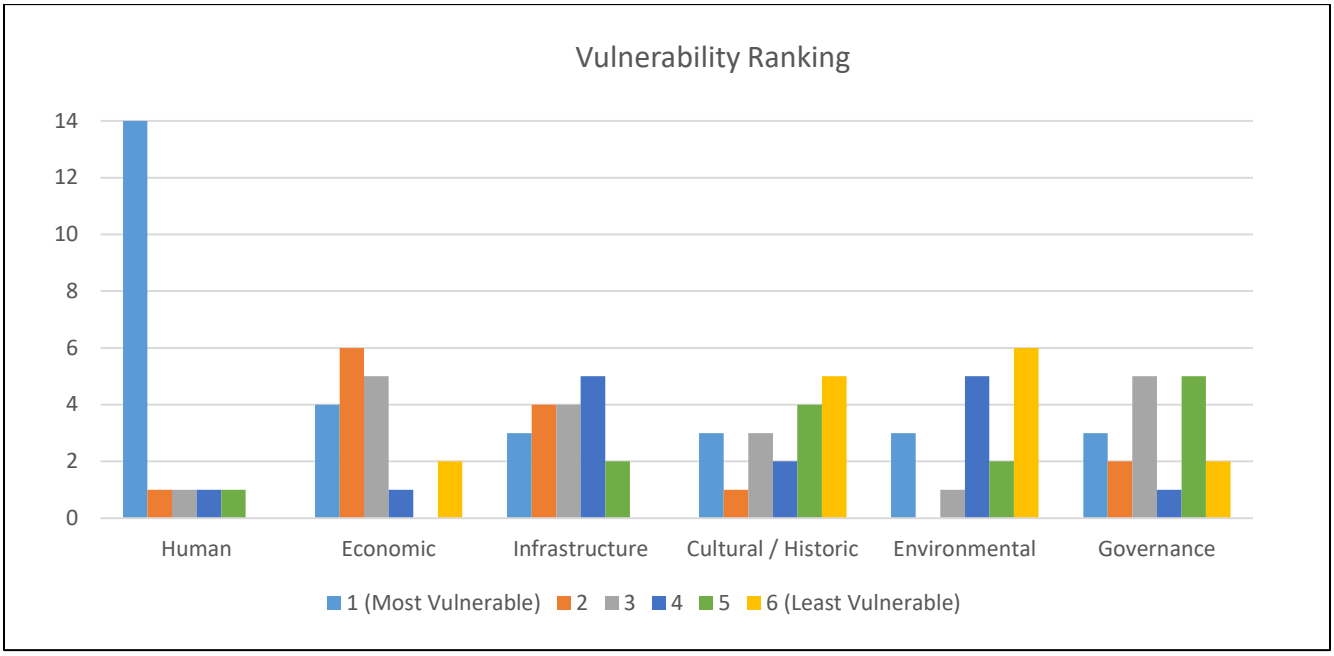

Figure 8: Vulnerability Ranking (Question #6)

Figure 9 shows to respondents' opinion of the importance of specific community assets (Question 7).

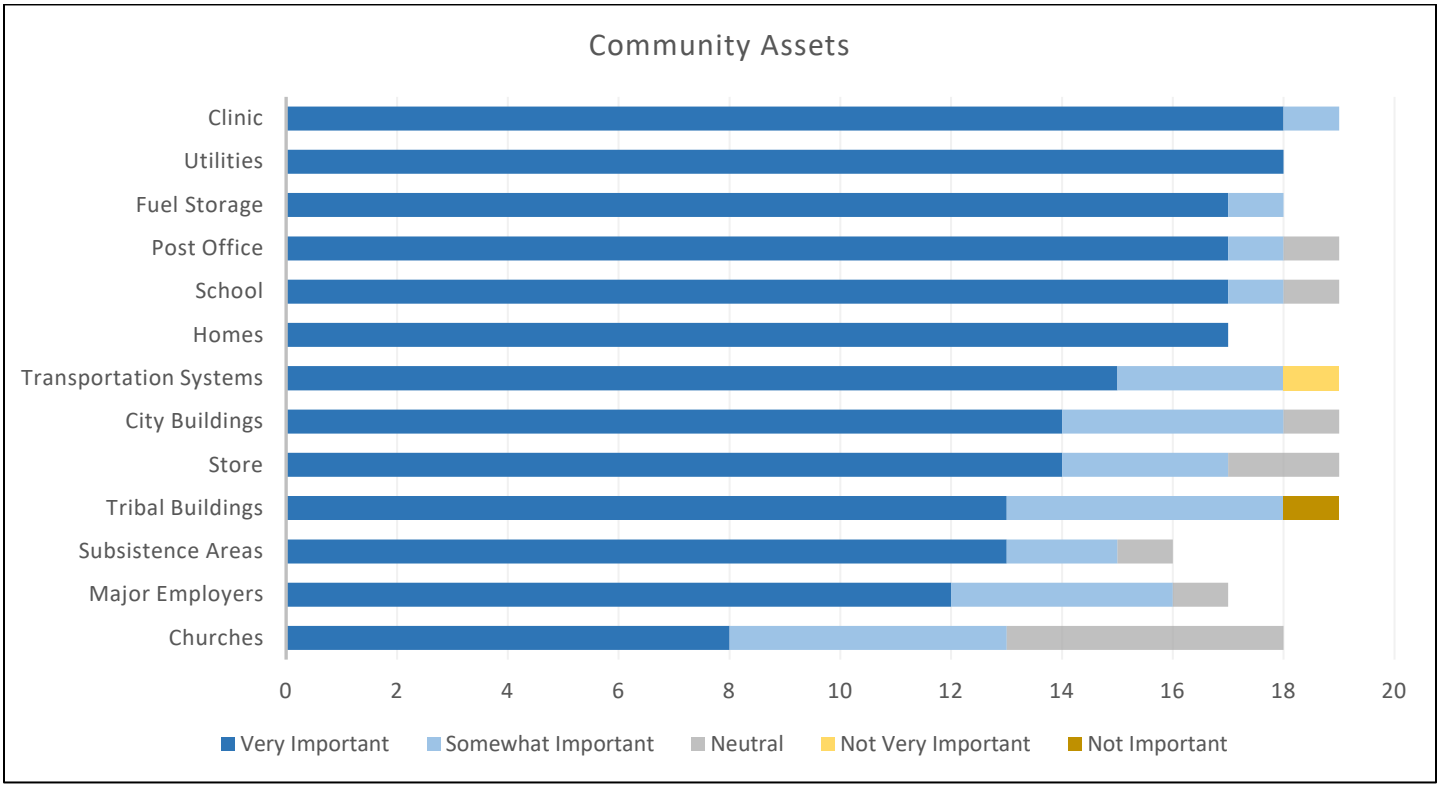

Figure 9: Community Assets (Question #7)

The survey respondents were asked to indicate agreement / disagreement with different mitigation strategies (Question 8). Figure 10 depicts the survey answers.

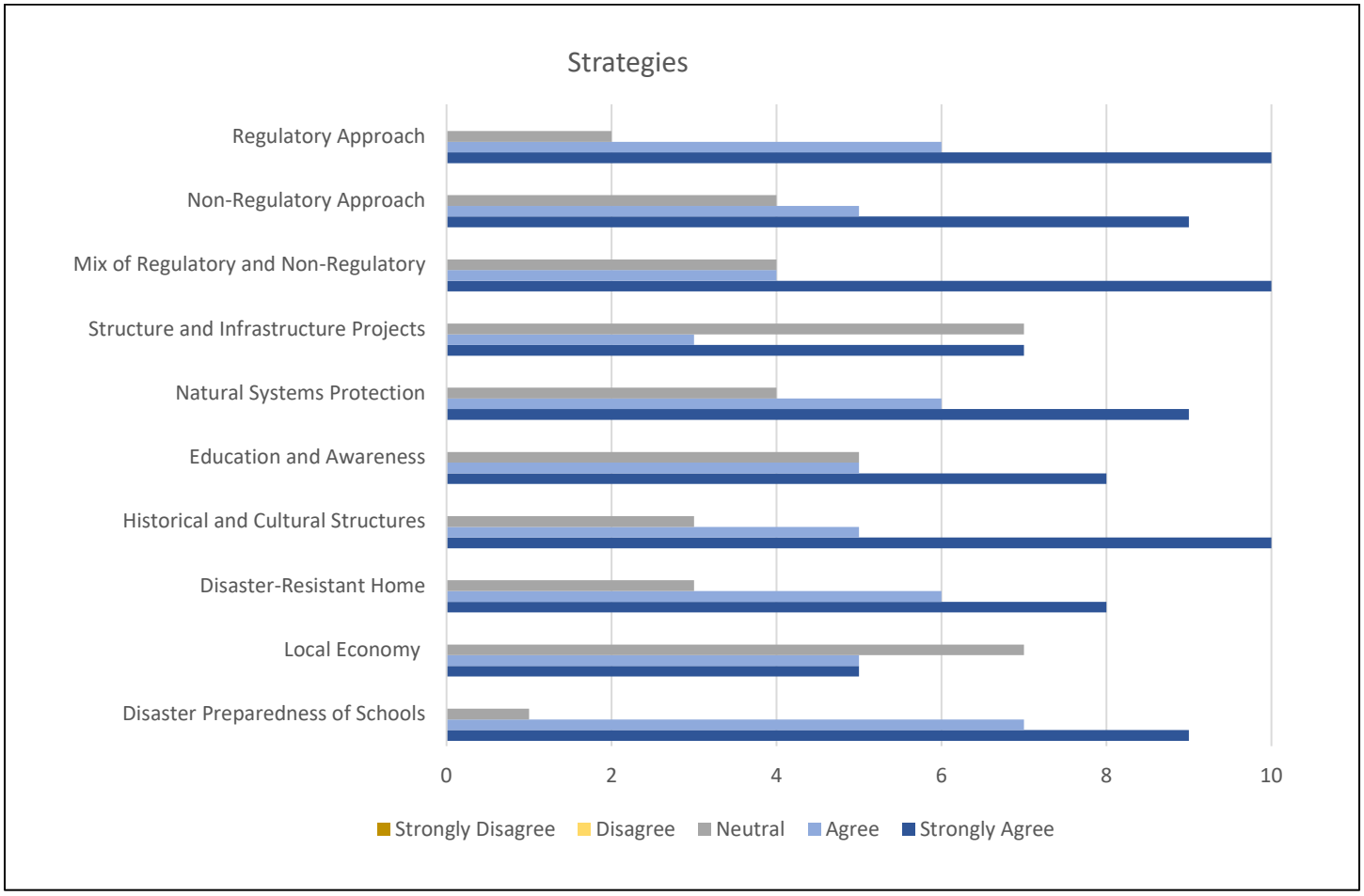

Figure 10: Mitigation Strategies (Question #8)

Question 9 asked community residents to identify community priorities regarding planning for natural hazards in their community (See Figure 11).

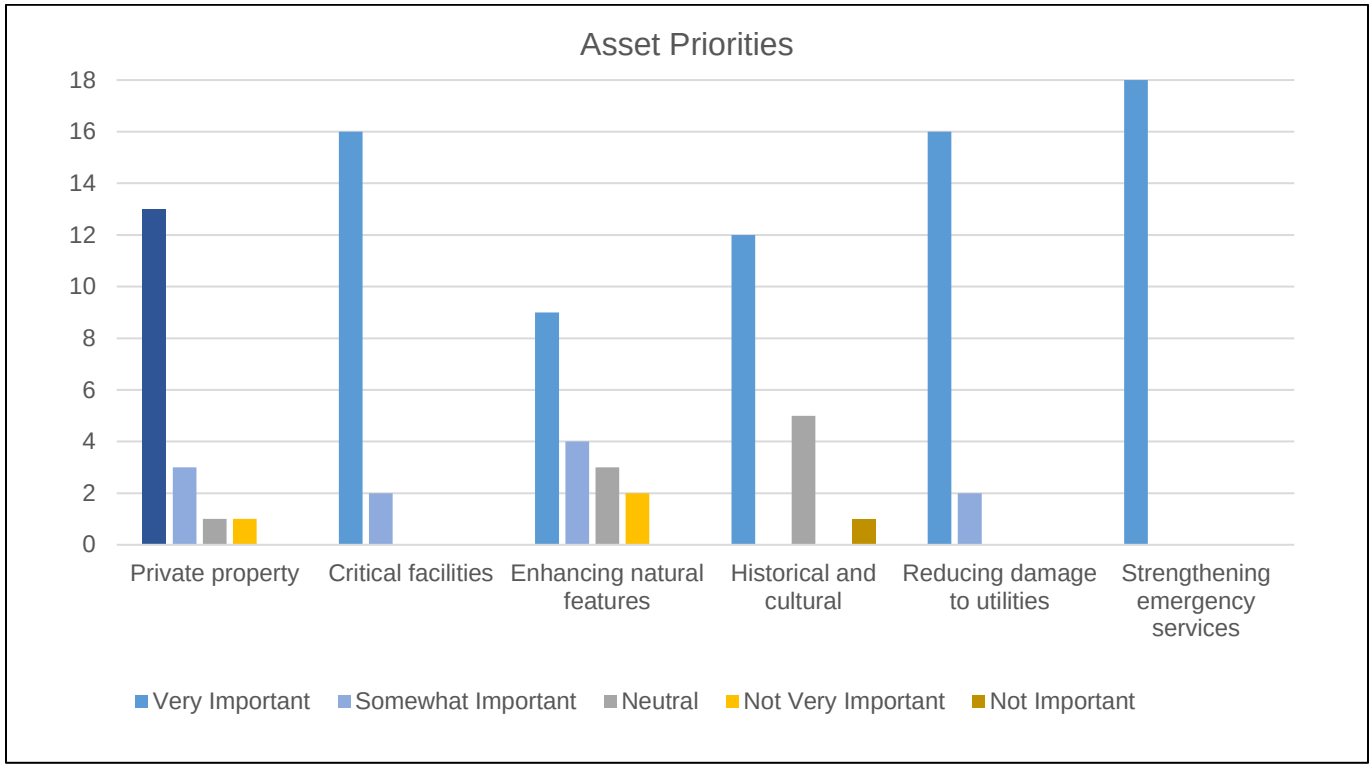

Figure 11: Asset Priorities (Question #9)

MITIGATION AND PREPAREDNESS ACTIVITIES IN THE HOUSEHOLD

Residents can protect themselves, their household members, and their own private property. Question 10 asked residents to identify preparedness activities they have personally done (See Figure 12)

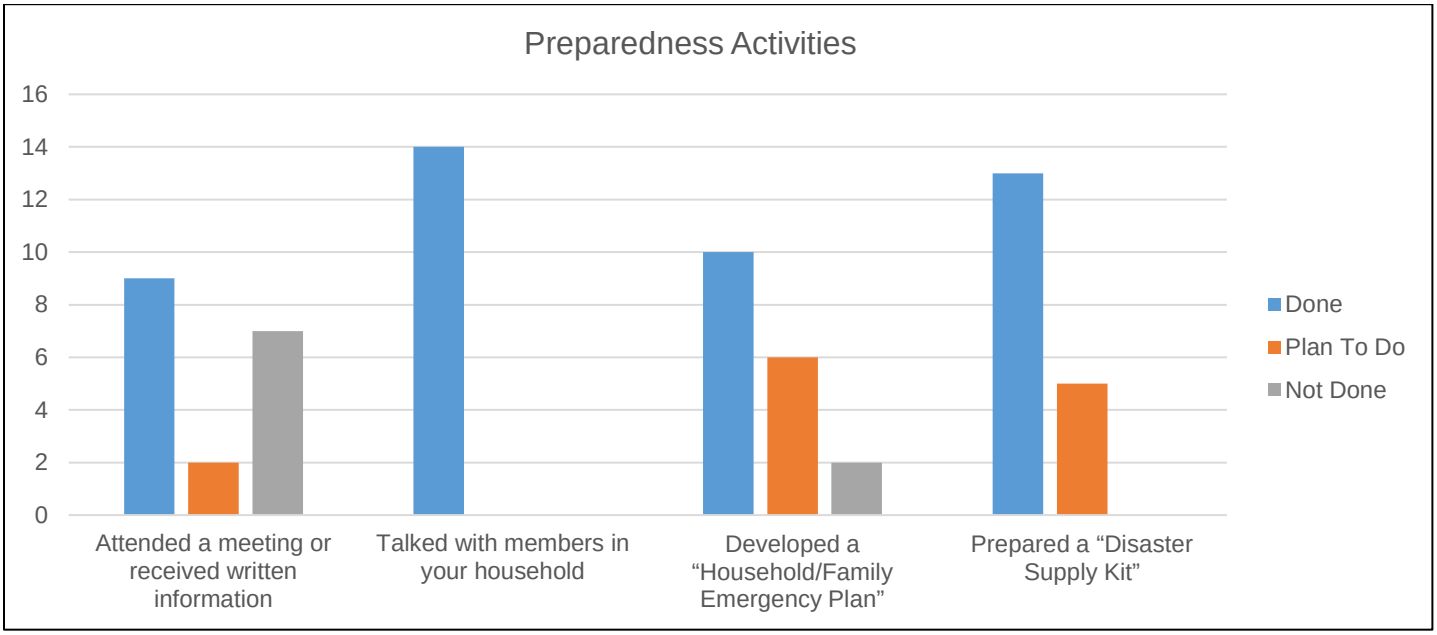

Figure 12: Preparedness Activities (Question #10)

GENERAL COMMENTS

The following is a list of comments made by some of the respondents.

- We need a shelter and food and water on the hill above 200 feet.

This newsletter describes the Bristol Bay Native Association Transportation and Infrastructure Department's Tribal Hazard Mitigation Planning project development processes to all interested agencies, stakeholders, and the public and to solicit comments. It can also be viewed on the BBNA's website at www.bbna.com

Bristol Bay Native Association (BBNA) Transportation and Infrastructure Department (DOTID) was awarded a Pre-Disaster Mitigation Program grant from the Federal Emergency Management Agency (FEMA) to prepare your 2019 Tribal Hazard Mitigation Plan (THMP). Bristol Engineering Services Company, LLC (BESC) was contracted to assist the BBNA DOTID with preparing a 2019 FEMA approvable THMP plan.

The TMP will identify all natural hazards, such as earthquake, flood, erosion, severe weather, and wildland/tundra fire hazards, etc. The plan will also identify the people and facilities potentially at risk and ways to mitigate damage from future hazard impacts. We will document the public participation and planning process as part of this project.

What is Hazard Mitigation?
Hazard mitigation projects eliminate the risk or reduce the hazard impact severity to people and property. Projects may include short- or long-term activities to reduce exposure to or the effects of known hazards. Hazard mitigation activities could include relocating or elevating buildings, replacing insufficiently sized culverts, using alternative construction techniques, developing, implementing, or enforcing building codes,or developing, and implementing education programs.

Why Do We Need A Hazard Mitigation Plan?
Communities must have a State, FEMA approved, and community adopted mitigation plan to receive a project grant from FEMA's pre- and post- disaster grants identified in their Hazard Mitigation Assistance and other agency's mitigation grant programs. BBNA DOTID plans to apply for mitigation funds after our plan is complete.

A FEMA approved and community adopted THMP enables the Local government to apply for the Hazard Mitigation Grant Program (HMGP), a disaster related assistance program; the Pre-Disaster Mitigation (PDM), and the National Flood Insurance Program (NFIP) Flood Mitigation Assistance (FMA) grant programs.

The Planning Process
There are very specific federal requirements that must be met when preparing a FEMA approvable THMP. These requirements are commonly referred to as the planning process requirements of 44 CFR 201.7 (c)

The following steps describe the planning process in order to develop the THMP.

1. **Establish the Planning Team**
2. **Education of the Planning Team**
3. **Assess Risks**
4. **Assess Capabilities**
5. **Develop a Mitigation Strategy**
6. **Monitor, Evaluate, and Plan Updates**

We are currently in the very beginning stages of preparing the plan development. We will be conducting a Planning Team Meeting to introduce the project and planning team, to gather comments from community residents, identify hazards, and collect data to refine the vulnerability assessment.

We Need Your Help

BESC has prepared survey packets to begin collecting information for your THMP. Survey packets will be mailed to your village council and sent by email to your village administrator.

Establishing a Planning Team is a very important step. We will need a point of contact (POC)/team leader from your community. This group will consist of 2-5 people that have good knowledge about land use, the transportation system, public facilities, and safety resources within the community. BBNA DOTID will be in contact with your tribe to determine a POC and your planning team.

Once the Planning Team has been developed, they will begin to work on the following items:

- Identifying the hazards that impact your community;
- Determining information about the hazards such as, location, history, extent, and the probability of future events;
- Completing a risk analysis, and;
- Developing problem statements and goals.

BBNA DOTID will be in contact with your tribe to set up an initial teleconference meeting with the Planning Team, BBNA DOTID, and BESC to continue to work on the THMP development.

The BBNA DOTID team will be led by Annie Fritze, DOTID Program Manager or Dan Breeden, Department Director with assistance from Bristol Engineering Service Company, LLC (contracted by BBNA). BESC will be developing materials and lead the planning process with guidance from BBNA DOTID staff.

BBNA Tribal Hazard Planning Team

Team Member	Title	Involvment
Annie Fritze	Program Manager	THMP Team Leader, data gathering and plan review
Dan Breeden	Department Director	THMP Team Leader, data gathering and plan review
Isaac Pearson, P.E.	Senior Engineer	THMP Consultant
Danielle Dance	Civil Engineer	THMP Consultant

Public Participation

The purpose of this newsletter is to keep you informed, and to allow you every opportunity to voice your opinion regarding these important projects. We want to encourage public involvement as a continuous effort throughout the project.

We encourage you to take an active part in the development effort, and preparation of the Tribal Hazard Mitigation Plan.

The goal is to receive comments, identify key issues or concerns, and improve mitigation ideas, and to guide the community.

Please contact BBNA DOTID program staff or BESC if you have any questions, comments, or requests for more information:

Bristol Bay Native Association DOTID **Annie Fritze OR** **Dan Breeden** **PO Box 310** **Dillingham, Alaska 99576** **(907) 842-6219**	**Bristol Engineering Services Company, LLC** **Danielle Dance, Consultant** **111 W. 16th Avenue, Third Floor** **Anchorage, Alaska 99501** **(907)563-0013**

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*** TX REPORT ***
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BRISTOL BAY NATIVE ASSOCIATION

PO BOX 310 DILLINGHAM ALASKA 99576
PHONE:(907) 842-5257
TOLL FREE 1-800-478-5257 FAX: (907) 842-5932

FAX TRANSMISSION COVER SHEET

DATE: August 20, 2018

TO: Vlg Admin

FAX:

SENDER: Annie Fritze

RE: Please Post and Share w/in your community - I will email and follow up with a phone call -
Quyana - AF

8/20/2018
All but Chignik Bay faxed - will refax - AF

3 PAGE (S), INCLUDING THIS COVER SHEET
If you do not receive all the pages please call

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*** FAX MULTI TX REPORT ***
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Chignik Bay

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AF

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*** FAX MULTI TX REPORT ***
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FAX TRANSMISSION COVER SHEET

DATE: August 20, 2018

TO: Vlg Admin

FAX:

SENDER: Annie Fritze

RE: Please Post and Share w/in your community - I will email and follow up with a phone call -

Quyana -

Dance, Danielle

From: Annie Fritze <afritze@bbna.com>
Sent: Monday, April 22, 2019 3:00 PM
To: marit@fwv-inc.com; jmetrokin@bbnc.net; tmase@lpsd.com; ndavis@lpsd.com; chignikcityclerk@gmail.com; Dick.Sharpe@yahoo.com; chignikcityclerk@gmail.com; bakelkok@bbha.org; rclark@bbahc.org; Gayla Hoseth; rcoupchiak@bbahc.org; mayson@bbahc.org; kateconley@lakeandpen.com; manager@lakeandpen.com; Carla Akelkok; Kristina Andrew; lwoods@gci.com; Senator.Lyman.Hoffman@akleg.gov; Representative.Bryce.Edgmon@akleg.gov; Program Managers
Cc: Pearson, Isaac; Dance, Danielle; Dan Breeden
Subject: Chignik Bay THMP
Attachments: Bristol Bay Native Association FEMA NewsletterChignik Bay.docx

Follow Up Flag: Follow up
Flag Status: Completed

Chignik Bay Community Stakeholders:

Bristol Bay Native Association (BBNA) was awarded a Federal Emergency Management Agency (FEMA) grant to develop Tribal Hazard Mitigation Plans (THMP's) for twenty (20) tribes in the Bristol Bay Region. We would like to take this time to acquaint you to the project, with the BBNA THMP Team, and to welcome your input and participation.

BBNA represents all tribes within the Bristol Bay Region, and as such provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. On behalf of the twenty tribes in this region, BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of their Tribal Hazard Mitigation Plan (THMP). The THMP was prepared to meet the requirements of the Stafford Act and Title 44 of the Code of Federal Regulations (CFR). By meeting these requirements, it makes the Tribal communities eligible for funding through state and federal mitigation grant programs.

We are excited to announce that the draft THMP for the Tribal Council of Chignik Bay will be made available to the Tribal offices for public review and comment April 22-May 01, 2019 This plan is available on BBNA's web page for public comment at: https://www.bbna.com/wp-content/uploads/DRAFT-FEMA-THMP-Chignik-Bay-19.April .2019.pdf

The goal is to receive comments, identify key issues or concerns, and improve ideas for mitigation. When the draft plan is complete, the results will be presented to the community before submitting to FEMA for their preliminary approval and returned back to the Tribal Council for formal adoption.

Public comments should be received no later than May 01, 2019. Comments can be made via email, fax, or phone to Danielle Dance, Bristol Engineering Services Company, LLC at ddance@bristol-companies.com, (907)563-0013 or by fax at (907)563-6713. If no comments are received by the end of the comment period it will be assumed that there were no comments on the draft.

Please contact me should you have any additional questions at afritze@bbna.com, (907)842-6143 or Danielle Dance at ddance@bristol-companies.com, (907)563-0013

Annie Fritze
Transportation and Infrastructure Program Manager
afritze@bbna.com
907-842-6143

Bristol Bay Native Association
Transportation and Infrastructure Development

April 2019 Newsletter 2
Chignik Bay

This newsletter discusses the Bristol Bay Native Association Transportation and Infrastructure Department's Tribal Hazard Pre-Mitigation Plan for your Tribal Council. This newsletter has been prepared to inform interested agencies, stakeholders, and the public about the project and to solicit comments. This newsletter and the draft mitigation plan can also be viewed on the BBNA's website at www.bbna.com

Bristol Bay Native Association was awarded a Federal Emergency Management Agency (FEMA) grant to develop Tribal Hazard Mitigation Plans (THMP's) for twenty (20) tribes in the Bristol Bay Region. On behalf of the twenty tribes, BBNA contracted Bristol Engineering Services Company, LLC (Bristol) to prepare your THMP.

The THMP identifies all natural hazards that affect the community, including earthquake, flood/erosion, severe weather, and wildland/tundra fire hazards, etc. The plan identifies the people and facilities potentially at risk and ways to mitigate damage from future hazard impacts. The public participation and planning process is documented as part of this project.

Why Do We Need A Hazard Mitigation Plan?
A FEMA approved and community adopted THMP enables your Tribal council's eligibility to apply for funding through state and federal mitigation grant programs.

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning is to maintain a process that leads to hazard mitigation actions. This THMP identifies the natural hazards that affect the Tribal communities, identifies actions to reduce losses from those hazards, and develops long-term strategies to reduce the impacts of future events on people, property, and the environment, and establishes a coordinated process to implement the plan.

The THMP establishes goals and objectives and associated actions to reduce and mitigate the threat of natural hazards to life, property, infrastructure, economic stability and emergency response capabilities in the Tribal communities while encouraging the protection and restoration of cultural and natural resources.

We Need Your Help

We are excited to announce that the draft THMP for the Tribal Council of Chignik Bay is available at the Tribal office for public review and comment, April 22-May 01, 2019. This plan is also available on BBNA's web page at www.bbna.com for public comment. The goal is to receive comments, identify key issues or concerns and improve ideas for mitigation. When the draft plan is complete, the results will be presented to the community before submitting to FEMA for their preliminary approval and returned back to the Tribal Council for formal adoption.

Public comments should be received no later than **May 01, 2019**. Comments can be made via email, fax, or phone to Danielle Dance, Bristol Engineering Services Company, LLC at: ddance@bristol-companies.com, (907)563-0013 or by fax at (907)563-6713.

Public Participation
Public involvement is important to the planning process of the THMP. This meets the requirements of 44 CFR 201.7(c)(1)(i).

The purpose of this newsletter is to encourage public involvement as a continuous effort throughout the project. The goal is to receive comments, identify key issues or concerns, and improve mitigation ideas from all stakeholders in your community.

We encourage you to take an active part in preparing the Tribal Hazard Mitigation Plan development effort. The purpose of this newsletter is to keep you informed and to allow you every opportunity to voice your opinion regarding these important projects.

If you have any questions, comments or requests for more information, please contact:

Danielle Dance, THMP Consultant
111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501
(907)563-0013
ddance@bristol-companies.com

Annie Fritze, BBNA DOTID
PO Box 310
Dillingham, Alaska 99576
(907)842-6143
afritze@bbna.com

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Aleknagik
Chignik Bay
Chignik Lagoon
Chignik Lake
Clarks Point
Curyung
Egegik
Ekuk
Ekwok
Igiugig
Iliamna
Ivanof Bay
Kanatak
King Salmon
Kokhanok
Koliganek
Levelock
Manokotak
Naknek
New Stuyahok
Newhalen
Nondalton
Pedro Bay
Perryville
Pilot Point
Port Heiden
Portage Creek
South Naknek
Togiak
Twin Hills
Ugashik

January 9, 2019

The Honorable Bryce Edgmon
State Capitol Room 208
Juneau, AK 99801

RE: Introducing BBNA's Tribal Hazard Mitigation Planning Project

Dear Representative Edgmon:

Bristol Bay Native Association (BBNA) was awarded a Federal Emergency Management Agency (FEMA) grant to develop Tribal Hazard Mitigation Plans (THMP's) for twenty (20) tribes in the Bristol Bay Region. We would like to take this time to acquaint you to the project, with the BBNA THMP Team, and to welcome your input and participation.

BBNA represents all tribes within the Bristol Bay Region, and as such provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. On behalf of the twenty tribes in this region, BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of their Tribal Hazard Mitigation Plan (THMP). The THMP was prepared to meet the requirements of the Stafford Act and Title 44 of the Code of Federal Regulations (CFR). By meeting these requirements, it makes the Tribal communities eligible for funding through state and federal mitigation grant programs.

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning is to maintain a process that leads to hazard mitigation actions. This THMP identifies the natural hazards that affect the Tribal communities, identifies actions to reduce losses from those hazards, and develops long-term strategies to reduce the impacts of future events on people, property, and the environment, and establishes a coordinated process to implement the plan. The THMP establishes goals and objectives and associated actions to reduce and mitigate the threat of natural hazards to life, property, infrastructure, economic stability and emergency response capabilities in the Tribal communities while encouraging the protection and restoration of cultural and natural resources.

It is the goal of the Tribal organizations to create a disaster-resistant community for the Tribal members and the general public. The THMP includes information to assist government leaders and residents with current and future planning efforts to efficiently and effectively mitigate natural hazards in their communities.

We are excited to announce that the draft THMP for the Tribal Councils of **Aleknagik, Chignik Bay, Chignik Lagoon, Chignik Lake, Clarks Point, Egegik, Ekuk, Kanatak, Levelock, Manokotak, New Stuyahok, Nondalton, Perryville, Pilot Point, Port Heiden, Portage Creek, Togiak and Twin Hills** will be made available to their Tribal offices for public review and

comment in the next few months. These plans will also be made available on BBNA's web page for public comment at www.bbna.com. The goal is to receive comments, identify key issues or concerns and improve ideas for mitigation. When the draft plan is complete, the results will be presented to the community before submitting to FEMA for their preliminary approval and returned back to the Tribal Council for formal adoption.

A FEMA approved and community adopted THMP enables the Tribal council's eligibility to apply for funding through state and federal mitigation grant programs.

Sincerely,
Bristol Bay Native Association

Ralph Andersen,
President/Chief Executive Officer

cc: Dan Breeden, BBNA DOTID Director
Annie Fritze, BBNA DOTID Program Manager
Isaac Pearson, BESC Senior Engineer
Danielle Dance, BESC Civil Engineer

BRISTOL BAY NATIVE ASSOCIATION
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Aleknagik
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Curyung
Egegik
Ekuk
Ekwok
Igugig
Iliamna
Ivanof Bay
Kanatak
King Salmon
Kokhanok
Koliganek
Levelock
Manokotak
Naknek
New Stuyahok
Newhalen
Nondalton
Pedro Bay
Perryville
Pilot Point
Port Heiden
Portage Creek
South Naknek
Togiak
Twin Hills
Ugashik

January 9, 2019

The Honorable Lyman Hoffman
PO Box 886
Bethel, AK 99559

RE: Introducing BBNA's Tribal Hazard Mitigation Planning Project

Dear Senator Hoffman:

Bristol Bay Native Association (BBNA) was awarded a Federal Emergency Management Agency (FEMA) grant to develop Tribal Hazard Mitigation Plans (THMP's) for twenty (20) tribes in the Bristol Bay Region. We would like to take this time to acquaint you to the project, with the BBNA THMP Team, and to welcome your input and participation.

BBNA represents all tribes within the Bristol Bay Region, and as such provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. On behalf of the twenty tribes in this region, BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of their Tribal Hazard Mitigation Plan (THMP). The THMP was prepared to meet the requirements of the Stafford Act and Title 44 of the Code of Federal Regulations (CFR). By meeting these requirements, it makes the Tribal communities eligible for funding through state and federal mitigation grant programs.

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning is to maintain a process that leads to hazard mitigation actions. This THMP identifies the natural hazards that affect the Tribal communities, identifies actions to reduce losses from those hazards, and develops long-term strategies to reduce the impacts of future events on people, property, and the environment, and establishes a coordinated process to implement the plan. The THMP establishes goals and objectives and associated actions to reduce and mitigate the threat of natural hazards to life, property, infrastructure, economic stability and emergency response capabilities in the Tribal communities while encouraging the protection and restoration of cultural and natural resources.

It is the goal of the Tribal organizations to create a disaster-resistant community for the Tribal members and the general public. The THMP includes information to assist government leaders and residents with current and future planning efforts to efficiently and effectively mitigate natural hazards in their communities.

We are excited to announce that the draft THMP for the Tribal Councils of **Aleknagik, Chignik Bay, Chignik Lagoon, Chignik Lake, Clarks Point, Egegik, Ekuk, Kanatak, Levelock, Manokotak, New Stuyahok, Nondalton, Perryville, Pilot Point, Port Heiden, Portage Creek, Togiak and Twin Hills** will be made available to their Tribal offices for public review and comment in the next few months. These plans will also be made available on BBNA's web page for

public comment at www.bbna.com. The goal is to receive comments, identify key issues or concerns and improve ideas for mitigation. When the draft plan is complete, the results will be presented to the community before submitting to FEMA for their preliminary approval and returned back to the Tribal Council for formal adoption.

A FEMA approved and community adopted THMP enables the Tribal council's eligibility to apply for funding through state and federal mitigation grant programs.

Sincerely,
Bristol Bay Native Association

Ralph Andersen,
President/Chief Executive Officer

cc: Dan Breeden, BBNA DOTID Director
Annie Fritze, BBNA DOTID Program Manager
Isaac Pearson, BESC Senior Engineer
Danielle Dance, BESC Civil Engineer

APPENDIX C

Plan Maintenance

- Maintenance Monitoring Form (THMP Form 4-1)
- Plan Update Evaluation Form (THMP Form 4-2)

MAINTENANCE MONITORING FORM

Use this form to track the status of implementation of the identified mitigation actions, once a year. Use the information to provide the Council with a brief status report.

Date	**Evaluator**	**Comments** *(Brief Status Overview of Mitigation Actions)*

Date	**Evaluator**	**Comments** *(Brief Status Overview of Mitigation Actions)*

PLAN UPDATE EVALUATION FORM

Plan Section	Considerations	Explanation
Planning Process	Have any internal or external agencies been invaluable to the mitigation strategy?	
	Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently?	
	Has the Planning Team undertaken any public outreach activities?	
	How can public participation be improved?	
Capability Assessment	Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan?	
	Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?	
	Are there different or new education and outreach programs and resources available for mitigation activities?	

Plan Section	Considerations	Explanation
Plan Maintenance Procedures	Was the plan monitored and evaluated as anticipated?	
	What are needed improvements to the procedures?	
Hazard Profile	Has a natural and/or technical or human-caused disaster occurred?	
	Should the list of hazards addressed in the plan be modified? What hazards need to be addressed? Are there hazards that need to be added or removed? If so, list the hazards.	
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	
Risk Analysis	Do any new critical facilities or infrastructure need to be added to the asset lists?	
	Have any changes in development trends occurred that could create additional risks?	

Plan Section	Considerations	Explanation
Mitigation Strategy	Are the goals still applicable?	
	Should new mitigation actions be added to the community's Mitigation Action Plan?	
	Do existing mitigation actions listed in the community's Mitigation Action Plan need to be reprioritized?	
	Have elements of the plan been incorporated into other planning mechanisms?	

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APPENDIX D

Funding Sources

CLIMATE RESILIENCE IN ALASKAN COMMUNITIES

Catalog of Federal Programs

PRODUCT OF THE

Coastal Erosion Working Group

OF THE ARCTIC EXECUTIVE STEERING COMMITTEE

September 2, 2015

In February 2015, the newly established Arctic Executive Steering Committee (AESC), in one of its first actions, established a Coastal Erosion Working Group (CEWG). The CEWG, which included representatives from the Executive Office of the President as well as ten Federal agencies, was tasked with examining opportunities for Federal action to address the imminent threats that coastal erosion and flooding pose to Alaskan Arctic coastal communities. Representation on the working group drew from both headquarters and the Alaska region, ensuring good knowledge of State and local stakeholders' needs.

One of the recommendations that the CEWG presented at the June meeting of the AESC, was to catalog Federal programs that could be useful for Alaskan coastal communities seeking to address erosion, flooding, and other resilience challenges. The following "Catalog of Federal Resilience Programs for Alaskan Communities" was developed by the CEWG in response to this recommendation. We hope this resource will support communities in Alaska in identifying Federal resources available to help address some of great challenges they are facing.

Ambassador Mark Brzezinski
Executive Director, Arctic Executive Steering Committee

Overview

According to the U.S. National Climate Assessment, over the past 60 years, climate change has caused the Alaskan Arctic to warm twice as rapidly as the rest of the United States, and accelerated rates of erosion caused by the combination of repeated extreme weather events, thawing permafrost, and decreased arctic sea ice are threatening the way of life in native villages.

Developed under the leadership of the Arctic Executive Steering Committee's (AESC) Coastal Erosion Work Group (CEWG), this catalog of Federal technical assistance programs and funding resources is the result of collaboration across Federal agencies to identify existing programs that may be used to assist coastal communities in Alaska facing challenges associated with climate-related risks. Although a variety of Federal programs are available to provide assistance, lack of information about the full range of resources available can present a barrier to communities securing assistance. This compendium is intended to help Alaskan communities identify Federal resources that can be used to support local efforts to gather and evaluate information about the risks posed by coastal erosion and other hazards; building capacity to mitigate those risks; advance onsite measures; and, if necessary, relocate community assets.

Each program's entry describes its purpose and funding potential, eligible applicants, and activities typically undertaken with its support. The Quick Reference Program Matrix serves to identify which programs can support the following activities:

> **Information Gathering and Evaluation:** Risk assessment and monitoring activities, including assessing hazards like coastal erosion, mapping subsistence patterns, and tracking natural climate variability;
> **Capacity Building:** Training, education, and community planning efforts, including digital access to tools and development of administrative needs to inform resilience planning;
> **On-site Measures:** Maintaining and strengthening infrastructure, land, and livelihoods within a community. Examples include redesigning roads and evacuation routes due to climate change impacts and investing in infrastructure that generates economic returns; and
> **Relocation:** Activities that support the relocation of entire communities or certain community assets, including new site identification and development.

Contributing agencies include the Departments of Agriculture, Energy, Health and Human Services, Housing and Urban Development, the Interior, Transportation, Homeland Security, Commerce, the Environmental Protection Agency, and the U.S. Army Corps of Engineers. While this guide attempts to be as comprehensive as possible in describing relevant Federal grant programs, programs are continually evolving and are subject to change.

About the Arctic Executive Steering Committee

President Obama established the AESC in his January 2015 Executive Order 13689 on *Enhancing Coordination of National Efforts in the Arctic*. The Executive Order directed Federal agencies to strengthen international cooperation to mitigate the greenhouse gas emissions driving climate change, understand more fully and manage more effectively the adverse effects of climate change, protect life and property, develop and manage resources responsibly, enhance the quality of life of Arctic inhabitants, and serve as stewards for valuable and vulnerable ecosystems. The AESC was charged with guiding executive departments and agencies and enhancing coordination of Federal Arctic policies across agencies and offices, and with State, local, and Alaska Native tribal governments and stakeholders.

The CEWG, co-chaired by the Department of Housing and Urban Development (HUD) and the Department of the Interior (DOI), was created to examine opportunities for improving Federal actions to address the imminent threat of coastal erosion and flooding impacting Alaskan Arctic coastal communities.

Quick Reference Programs Matrix

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
			Risk Assessment	Monitoring	Technical Training	Environmental Education	Preserving Traditional Lifestyles	Strategic Planning	Infrastructure Strengthening	Coastal Erosion Control	Recovery of Critical Infrastructure	Economic Development	Site Evaluation	Development	Infrastructure
Department of Homeland Security - Federal Emergency Management Agency	Flood Mitigation Assistance	12						X	X						
	Hazard Mitigation Grant Program	12						X	X	X	X				
	Pre-Disaster Mitigation Grant Program	13						X	X	X	X				
	Risk Mapping, Assessment, and Planning	13	X	X	X			X							
Department of Commerce – Economic Development Authority	Economic Adjustment Assistance Program	14	X					X	X		X	X	X	X	X
	Public Works Program	14							X		X	X		X	X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Department of Commerce – National Oceanic and Atmospheric Administration	Alaska Center for Climate Assessment and Policy	15	X					X							
	Alaska Ocean Observing System	15	X	X											
	Analyze, Forecast, and Support	16	X	X											
	Integrated Ocean and Coastal Mapping Program	16	X	X											
	National Oil and Hazardous Substances Pollution Contingency Plan	16	X	X				X							
	Climate Program	17	X		X	X									
	Observations	17	X	X											
Department of Energy	Alaska START Program	17			X	X		X	X		X	X			X
	Tribal Energy Program	18			X	X		X	X		X	X			X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Department of the Interior	Alaska Climate Science Center	19	X	X	X			X					X		
	ANILCA Sec. 1318 Historic Assistance	19					X								
	Landscape Conservation Cooperatives	19	X	X											
	North Slope Science Initiative	20	X	X		X									
	Subsistence – ANLICA Title VIII	20					X	X							
Department of the Interior - Bureau of Indian Affairs	Cooperative Landscape Conservation	20			X			X							
	Indian Energy Resource Development Program	21			X							X			X
	Tribal Transportation Program	21							X			X			X
Department of Transportation	Transportation Investment Generating Economic Return	22						X	X			X			X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Department of Transportation - Federal Aviation Administration	Airport Improvement Program	22							X						X
Department of Transportation - Federal Highway Administration	Federal-aid Highway Apportioned Funds	23							X			X			X
	Tribal Transportation Program	23						X	X			X			X
Department of Transportation - Federal Transit Administration	Public Transportation on Indian Reservations Program Tribal Transit Program	24						X	X		X				X
Environmental Protection Agency	Alaska Native Villages Grant	24			X				X						X
	Clean Water Act Indian Set-Aside Program	25						X	X						X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Environmental Protection Agency	Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program	25							X					X	
	Environmental Justice Small Grants	26						X							
	Indian General Assistance Program	26	X	X											
	Office of Water Climate Ready Water Utilities Program	27	X					X							
	Safe Drinking Water Act (SDWA) Tribal Set-Aside Program	27						X	X						X
Health and Human Services	ACF/ANA Environmental Regulatory Enhancement	28			X		X	X				X			
	CDC/NCID/ Arctic Investigations Program	29	X	X		X									

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Health and Human Services	CDC/NIOSH American Indian/ Alaska Native Program	29			X	X									
	CDC/NIOSH Climate Change Initiative	30	X												
	NIH/NIEHS Alaska Community Action on Toxics	30	X	X	X	X	X	X							
	NIH/NIEHS Research to Action	31	X	X	X	X	X	X							
	NIH/NIEHS The Center for Indigenous Environmental Health Research	31	X	X	X	X	X	X							
Department of Housing and Urban Development	Community Development Block Grant	32	X	X	X						X			X	X
	Emergency Solutions Grants Program	33							X		X				
	Indian Community Development Block Grant	33							X		X	X		X	X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
Department of Housing and Urban Development	Mortgage Insurance for Disaster Victims – 203(h)	34												X	
	Native American Housing and Self-Determination Act - Indian Housing Block Grant Program	34	X	X	X	X		X	X	X	X		X	X	X
	Section 184 Loan Guarantee Program	35												X	
	Title VI Loan Guarantee Program	35							X	X	X			X	X
US Army Corps of Engineers	Continuing Authorities Program	35							X	X					
	International and Interagency Support Services	36	X	X			X	X	X	X	X		X	X	X
	Planning Assistance to States	36	X					X					X		
	Tribal Partnership Program	37	X					X	X	X			X	X	X

Agency	Program	Page	Information Gathering		Capacity Building				On-Site Measures				Relocation		
US Department of Agriculture	Business and Industry Loan Guarantee	37										X			
	Community Facilities Loans and Grants	38												X	
	Electric Loans	38							X						X
	Rural Business Development Grant	38										X			
	Rural Energy for America Loans and Grants	39							X						X
	Sewer, Water, Solid Waste Loans and Grants	39							X						X
	Single Family Direct and Guaranteed Loans	40												X	
	Single Family Repair Loans and Grants	40									X				
	Telecom Loans	41							X						X

Department of Homeland Security (DHS) – Federal Emergency Management Agency (FEMA)

Program Name: Flood Mitigation Assistance (FMA)

Purpose: Authorized to reduce or eliminate claims under the National Flood Insurance Program (NFIP) by eliminating the long-term risk of flood damage to structures insured under the NFIP.

Eligible Applicants: States, U.S. territories, Federally-recognized tribes apply on behalf of local communities, who must be participating in the NFIP.

Funding Range: Severe Repetitive Loss structures can be funded at 100% federal cost; repetitive loss structures can be cost-shared at 90% federal cost. Insured structures and planning grants are cost-shared at 75 percent federal, 25 percent non-federal. Maximum Federal share for planning sub-applications per Applicant is $50,000 for State plans and $25,000 for local plans. Technical assistance up to $50,000 is available for states who were awarded FMA grant funds totaling at least $1million in FY 2014.

Program Activities: Projects include the elevation, relocation and acquisition of flood prone structures, and projects to address minor, localized flooding issues, such as upgrading culverts, building detention ponds, and otherwise improving local stormwater management facilities.

Because this program is funded by resources collected from NFIP policyholders, the recent focus of the program has been on mitigating severe repetitive loss structures in order to reduce the drain on the National Flood Insurance Fund (NFIF).

Severe repetitive loss structures and repetitive loss structures are prioritized for funding to maximize cost-effectiveness and reduce claims to the NFIF.

Additional Information: http://www.fema.gov/media-library-data/1432854343618-674f4cfd5dd49813a9aef429e5d49c7d/FMAFactSheetFY2015.pdf

Program Name: Hazard Mitigation Grant Program (HMGP)

Purpose: Provides grants to states, Indian tribal governments and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the recovery from a disaster.

Eligible Applicants: Funds become available only after a disaster is declared. The Governor of the state determines availability, however it is frequently available anywhere within the state or tribe in which the declaration was made.

Funding Range: The amount of assistance available under the HMGP is a percentage of FEMA's assistance made available under the response and recovery programs for the declared major disaster.

HMGP funds are generally 15 percent of assistance under these programs for states with a Standard State Mitigation Plan and 20 percent of assistance under these programs for those with an Enhanced State Mitigation Plans. Small impoverished communities may be eligible for up to a 90% Federal cost share in accordance with the Stafford Act.

Program Activities: Some examples of projects eligible for HMGP and the PDM grant funds include the development of all-hazards mitigation plans at the tribal, state and local levels, the seismic retrofitting of critical public buildings, and acquisition, relocation or elevation of flood-prone properties located in the floodplain.

Additional Information: http://www.fema.gov/hazard-mitigation-grant-program

Program Name: Pre-Disaster Mitigation Grant Program (PDM)

Purpose: Designed to assist States, territories, Federally-recognized tribes, and local communities in implementing a sustained pre-disaster natural hazard mitigation program.

Eligible Applicants: States, U.S. territories, Federally-recognized tribes.

Funding Range: In 2015, each state is eligible to receive a set aside of 1 percent of the total appropriated PDM funding, or $250,000; $5 million is set aside for Federally-recognized Tribal governments to receive a set aside of 1 percent of the total appropriated PDM funding, or $250,000; The balance of PDM Grant Program funds will be distributed on a competitive basis to all eligible applicants.

Program Activities: Elevation, acquisition, or floodproofing structures, seismic or wind retrofit of structures, major or minor flood hazard reduction activities, mitigation planning

Additional Information: http://www.fema.gov/media-library-data/1432847398289-878c470e718239eedcaadc8d52ea1823/PDMFactSheetFY2015.pdf

Program Name: Risk Mapping, Assessment, and Planning (Risk MAP)

Purpose: Not only is flooding one of the most common and costly disasters, flood risk can also change over time because of new building and development, weather patterns and other factors. FEMA is working with federal, state, tribal and local partners across the nation to identify flood risk and help reduce that risk through the Risk Mapping, Assessment and Planning (Risk MAP) program.

Eligible Applicants: State, regional, Tribal, and local communities can use enhanced hazard data to make more informed decisions regarding risk.

Funding Range: Varies.

Program Activities: Risk MAP provides high quality flood maps and information, tools to better assess the risk from flooding and planning and outreach support to communities to help them take action to

reduce (or mitigate) flood risk. Each Risk MAP flood risk project is tailored to the needs of each community and may involve different products and services.

Additional Information: http://www.fema.gov/risk-mapping-assessment-and-planning-risk-map

Department of Commerce (DOC) – Economic Development Administration (EDA)

Program Name: Economic Adjustment Assistance Program

Purpose: Helps communities design and implement strategies to address evolving economic changes that are causing or threaten to cause serious structural damage to the underlying economic base or undermining locally-developed development goals.

Eligible Applicants: (1) District Organization of a designated Economic Development District; (2) Indian Tribe or a consortium of Indian Tribes; (3) State, county, city, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; (4) institution of higher education or a consortium of institutions of higher education; or (5) public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State.

Funding Range: Investments range from $100,000 to $1,250,000; the average is approximately $829,000.

Program Activities: Can be used to conduct feasibility or environmental studies, capitalize revolving loan funds, and to fund the construction of publicly-owned infrastructure, such as water and sewer facilities, access roads, rail spurs, and broadband, to support the expansion of area businesses; business incubators; job training facilities; and other infrastructure investments.

Additional Information: http://www.eda.gov/pdf/about/Economic-Adjustment-Assistance-Program-1-Pager.pdf

Program Name: Public Works Program

Purpose: The Public Works Program provides strategic-investments to help communities build or expand access to the infrastructure assets that are the most basic building blocks of an economy and are required to support the growth and economic development of distressed regions.

Eligible Applicants: (1) District Organization of a designated Economic Development District; (2) Indian Tribe or a consortium of Indian Tribes; (3) State, county, city, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; (4) institution of higher education or a consortium of institutions of higher education; or (5) public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State.

Funding Range: Investments range from $200,000 to $3,000,000, the average is approximately $1.4 million.

Program Activities: Traditional infrastructure through this program including water and sewer system improvements, industrial parks, business incubator facilities, expansion of port and harbor facilities, skill-training facilities, and the redevelopment of brownfields. Also, technology-based facilities; research and development commercialization centers; facilities for workforce development; wet labs; multi-tenant manufacturing facilities; research, business and science parks with fiber optic cable; and telecommunications infrastructure and development facilities.

Additional Information: http://www.eda.gov/pdf/about/Public-Works-Program-1-Pager.pdf

DOC – National Oceanic and Atmospheric Administration (NOAA)

Program Name: Alaska Center for Climate Assessment & Policy

Purpose: NOAA's Regional Integrated Sciences & Assessments (RISA) program supports research teams that help expand and build the nation's capacity to prepare for and adapt to climate variability and change.

Eligible Applicants: NOAA 5 year funding agreement with ACCAP; ACCAP awards funding to other entities to accomplish its five year goals.

Funding Range: Varies.

Program Activities: Partner with stakeholders to inform realistic community plans and climate adaptation strategies using the most scientifically accurate, reliable, and up-to-date information.

Additional Information: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/ACCAP.aspx

Program Name: Alaska Ocean Observing System

Purpose: Address regional and national needs for ocean information, gather specific data on key coastal and ocean variables, and ensure timely and sustained dissemination and availability of these data.

Eligible Applicants: AOOS Funding is based on a five year plan focusing on: safe marine operations; coastal hazard mitigation; tracking ecosystem and climate trends; and monitoring water quality.

Funding Range: $0-$500k.

Program Activities: (1) Enables advances in scientific understanding to support the sustainable use, conservation, management, and understanding of healthy ocean and coastal resources.

(2) Improves the Nation's capability to measure, track, explain, and predict events related directly and indirectly to weather and climate change, natural climate variability, and interactions between the oceanic and atmospheric environments.

Additional Information: http://www.ioos.noaa.gov/regions/aoos.html

Program Name: Analyze, Forecast, and Support

Purpose: Field forecast and warnings, facilities supporting the mission and programmatic leadership in the provision of life saving decision support services.

NWS has initiated Impact Based Decision Support Services (IDSS) to provide better, more useful information to partners, emergency managers, and decision makers to foster an appropriate public response.

Eligible Applicants: None, work is performed by NOAA.

Funding Range: N/A

Program Activities: Provides decision support services, warning coordination, and Arctic environmental intelligence (timely, reliable, and actionable information to help plan for and adapt to economic and ecological impacts, including disasters) to the State of Alaska and Alaska Native partners, industry and community stakeholders, and federal and other local officials.

Addresses mitigation science and technology gaps in the Arctic as well as forecast challenges to improve IDSS), such as: scarcity of in-situ observations (e.g., wave, ocean, and ice buoys, weather observation platforms, river gauge) in the Arctic; performance concerns with weather, water, ocean and wave prediction models in the Arctic region as compared to the rest of the US; and the lack of maturity of tactical and medium range weather and sea ice modeling capabilities.

Additional Information: http://www.weather.gov/organization/afs

Program Name: Integrated Ocean & Coastal Mapping Program

Purpose: Planning, acquiring, integrating, and disseminating ocean and coastal geospatial data and derivative products in a manner that permits easy access to and use by the greatest range of users.

Eligible Applicants: Participation in the IOCM approach (map used many times) is voluntary but coordination with and leveraging of other partner efforts are encouraged.

Funding Range: N/A

Program Activities: Federal mapping coordination.

Additional Information: http://iocm.noaa.gov/

Program Name: National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

Purpose: Area Committees -- composed of federal, state, and local government officials -- must develop detailed, location-specific Area Contingency Plans.

Eligible Applicants: Federal, state, and local government officials serve on the committees. Participation and input by Alaska Native entities to the committees is encouraged.

Funding Range: N/A

Program Activities: Planning, preparedness, and exercises support resiliency to oil spills. Environmental Sensitivity Indices (ESI) maps and other tools assess the risk from oil spills and would also be useful potential species impacts.

Additional Information: http://response.restoration.noaa.gov/

Program Name: Climate Program

Purpose: Fund high-priority climate science, assessments, decision support research, outreach, education, and capacity-building activities designed to advance our understanding of Earth's climate system, and to foster the application of this knowledge in risk management and adaptation efforts.

Eligible Applicants: None, work is performed by NOAA.

Funding Range: Varies.

Program Activities: Varies.

Additional Information: http://cpo.noaa.gov/

Program Name: Observations

Purpose: Collection of space, atmosphere, water, and climate observational data owned or leveraged by National Weather Service. The Office is responsible for the development, acquisition and management of cost-effective observing technologies, hardware and software enhancements, maintenance and repairs, logistics, cost management, technical data verification, and life-cycle replacements of NWS observational platforms.

Eligible Applicants: None, work is performed by NOAA.

Funding Range: N/A

Program Activities: Weather and sea ice observations.

Additional Information: http://www.nws.noaa.gov/om/osd/portal.shtml

Department of Energy (DOE)

Program Name: Alaska Strategic Technical Assistance Response Team (START) Program

Purpose: To provide technical assistance in strategic energy planning to accelerate clean energy and energy efficiency projects and move projects closer to implementation.

Eligible Applicants: Any Indian Tribe, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.).

Funding Range: Varies.

Program Activities: The START team, which consists of DOE, including its national laboratories, and the Denali Commission, along with DOE's national laboratories and other local and national experts, assists rural Alaska Native communities in developing strategic energy plans to help mitigate the impacts of climate change by conducting energy awareness and training programs, and pursuing new renewable energy and energy efficiency opportunities. As a competitive technical assistance opportunity, Alaska START is aimed at achieving the following goals:

- Reducing the cost and use of energy for rural Alaska consumers and communities
- Increasing local capacity, energy efficiency, and conservation through training and public education
- Increasing renewable energy deployment and financing opportunities for communities and utilities.

Additional Information: http://www.energy.gov/indianenergy/office-indian-energy-start-team

Program Name: Tribal Energy Program

Purpose: To provide financial and technical assistance that enables tribes to evaluate and develop their renewable energy resources and reduce their energy consumption through efficiency and weatherization.

Eligible Applicants: Federally recognized Indian tribes, bands, nations, Alaska Native villages; other organized tribal groups and communities – including Alaska Native regional and village corporations; tribal energy resource development organizations.

Funding Range: Varies.

Program Activities: DOE's Tribal Energy Program promotes tribal energy sufficiency and fosters economic development and employment of energy efficiency on tribal lands through the use of renewable energy and energy efficient technologies through government-to-government partnerships. The Tribal Energy program provides financial opportunities through a competitive process; technical assistance through DOE's national laboratories; and education and training through webinars, student internships, and workshops to help build the knowledge and skills essential to developing, implementing and sustaining energy efficiency and renewable energy efficiency and renewable energy projects.

Additional Information: http://apps1.eere.energy.gov/tribalenergy/

Department of the Interior (DOI)

Program Name: Alaska Climate Science Center

Purpose: The Alaska Climate Science Center (AK CSC) provides scientific information, tools, and techniques that managers and other parties interested in land, water, wildlife and cultural resources can use to anticipate, monitor, and adapt to climate change.

Eligible Applicants: Any

Funding Range: No specific funding levels or deadlines.

Program Activities: The Center and its partners provide expertise in climate science, ecology, environmental impacts assessment, modeling, cultural impacts, and advanced information technology.

Additional Information: https://www.doi.gov/csc/alaska/

Program Name: Alaska National Interest Lands Conservation Act (ANILCA) Sec. 1318 Historic Assistance

Purpose: Technical assistance in preserving cultural resources.

Eligible Applicants: All Tribes and Corporations in Alaska.

Funding Range: No specific funding levels or deadlines.

Program Activities: Wide variety of activities related to cultural resources.

Additional Information: Telephone: (907) 644-3456

Program Name: Landscape Conservation Cooperatives

Purpose: Science and technical assistance.

Eligible Applicants: Any village or other entity.

Funding Range: No specific funding levels or deadlines.

Program Activities: Examples: provide tools to assess coastal hazards, including accelerated coastal erosion associated with climate change. Specific projects include: acquisition and analysis of imagery to quantify historical erosion rates and enable communities to consider the stability of existing and future infrastructure; data and modeling needed to predict the severity of flooding based on the circumstances and magnitude of storms; community vulnerability assessments that incorporate coastal erosion as well as other aspects of coastal change.

These projects are underway or are newly completed. A shared effort is planned by LCCs in Alaska to work with partners and communities to utilize these tools and information during the winter of 2015-16.

Additional Information: Arctic Landscape Conservation Cooperative: http://arcticlcc.org/

Western Alaska Landscape Conservation Cooperative:
https://westernalaskalcc.org/SitePages/Western%20Alaska%20LCC.aspx

Program Name: North Slope Science Initiative

Purpose: To facilitate and improve collection and dissemination of ecosystem information pertaining to the Alaskan North Slope region, including coastal and offshore regions. To improve scientific and regulatory understanding of terrestrial, aquatic, and marine ecosystems for consideration in the context of resource development activities and climate change.

Eligible Applicants: Any.

Funding Range: No specific funding levels or deadlines.

Program Activities: Provide resource managers with the data and analyses they need to help evaluate multiple simultaneous goals and objectives related to each agency's mission on the North Slope. The NSSI uses and complements the information produced under other North Slope science programs. The NSSI also facilitates information sharing among agencies, non-governmental organizations, industry, academia, international programs, and members of the public to increase communication and reduce redundancy among science programs.

Additional Information: http://www.northslope.org/

Program Name: Subsistence – ANLICA Title VIII

Purpose: Technical assistance related to subsistence.

Eligible Applicants: Any Tribe or village in Alaska.

Funding Range: No specific funding levels or deadlines.

Program Activities: Examples: 1) subsistence mapping in coastal communities to document where people go for particular resources at particular times of the year; and 2) document the flow of resources through sharing networks, which could be greatly disrupted if whole communities and groups of families are relocated.

Additional Information: Telephone (907) 644-3596.

DOI – Bureau of Indian Affairs (BIA)

Program Name: Cooperative Landscape Conservation (shifting to Tribal Climate Resilience in FY16)

Purpose: Funding for tribal climate adaptation, and ocean & coastal planning. Engagement and technical support, not operational funds.

Eligible Applicants: Federally Recognized Tribes.

Funding Range: Current administrative limit is $250k per award.

Program Activities: BIA is investing in technical assistance to support adaptation planning, including coordination, training, travel support for relevant training, and digital access to data and tools.

Additional Information: http://www.indianaffairs.gov/WhoWeAre/BIA/climatechange/index.htm

Program Name: Indian Energy Resource Development Program

Purpose: Assist tribes in development of tribal energy resources. This includes the Tribal Energy Development Capacity (TEDC) grant program to build capacity to develop conventional or renewable energy resources on Indian lands.

Eligible Applicants: Federally Recognized Tribes.

Funding Range: Varies depending on appropriations.

Program Activities: The TEDC grant program helps tribes in assessing, developing, or obtaining the managerial, organizational and technical capacity needed to develop energy resources on Indian land and to account properly for resulting energy production and revenues.

Additional Information: http://www.bia.gov/WhoWeAre/AS-IA/IEED/DEMD/TEDCP/index.htm

Program Name: Tribal Transportation Program

Purpose: To provide funding to tribes for access to basic community services that enhance the quality of life in Indian country, such as construction and/or reconstruction of roads, bridges, docks and trails. The TTP replaces the former Indian Reservation Roads (IRR) program. Note that this program is the same as the Department of Transportation's (DOT) TTP, although DOT can additionally provide strategic planning.

Eligible Applicants: Federally Recognized Tribes.

Funding Range: TTP is formula funded.

Program Activities: New roads can be built based on the specific needs for evacuation routes, or redesigning if impacted roads by changes due to climatic variances (flooding, snow fences and road shelters, etc.). TTP funds can also be used for facility preservation, road maintenance and bridge maintenance, as well as "emergency relief for federally owned roads" (this includes tribal or native roads and facilities that are transportation related). Equipment storage, material storage, equipment purchase are other allowable uses.

Additional Information: BIA: http://www.bia.gov/WhoWeAre/BIA/OIS/Transportation/index.htm; DOT: http://flh.fhwa.dot.gov/programs/ttp/

Department of Transportation (DOT)

Program Name: Transportation Investment Generating Economic Return (TIGER)

Purpose: Discretionary grants that focus on capital projects that generate economic development and improve access to reliable, safe and affordable transportation for disconnected communities, while emphasizing improved connection to employment, education, services and other opportunities, workforce development, or community revitalization.

Eligible Applicants: State, local and tribal governments, including U.S. territories, transit agencies, port authorities, metropolitan planning organizations (MPOs), and other political subdivisions of State or local governments.

Funding Range: $500M nationwide funds. Funding cannot exceed $200M and no more than $125M in a single state. TIGER can cover up to 80% in an urban area and 100% in a rural area. Minimum award for urban is $10M and rural is $1M. The annual funding for TIGER changes annually based on the appropriations and authorizations.

Program Activities: Eligible projects for TIGER Discretionary Grants are capital projects that include, but are not limited to: highway or bridge projects eligible, (including bicycle and pedestrian related projects); public transportation projects; passenger and freight rail transportation projects; port infrastructure investments (including inland port infrastructure); and intermodal projects. Eligibility requirements must be satisfied.

Additional Information: http://www.transportation.gov/tiger

DOT – Federal Aviation Administration (FAA)

Program Name: Airport Improvement Program

Purpose: Airport improvement planning and development.

Eligible Applicants: Public-use airports included within the National Plan of Integrated Airport Systems (NPIAS).

Funding Range: State of Alaska: 93.75% Federal, 6.25% cost sharing.

Program Activities: The AIP is authorized to provide grant funding for eligible airport improvements as requested by eligible airport sponsors. This would potentially include measures to safeguard airport infrastructure from erosion.

Additional Information: http://www.faa.gov/airports/aip/

DOT – Federal Highway Administration (FHWA)

Program Name: Federal-aid Highway Apportioned Funds

Purpose: Planning, preventive maintenance, infrastructure preservation, construction of highways and bridges, safety, congestion mitigation, and air quality improvement.

Eligible Applicants: State of Alaska Department of Transportation and Public Facilities.

Funding Range: Alaska receives approximately $480M in apportionment funds annually. Federal share is typically 80%.

Program Activities: In Alaska, Federal-aid highway apportioned funds may be used for roads, pedestrian facilities, and snowmobile trails. Funding may be available to assist villages with improving or repairing roads and boardwalks.

Additional Information: http://www.fhwa.dot.gov/federalaid/projects.cfm

Program Name: Tribal Transportation Program (TTP)

Purpose: To provide funding to tribes for access to basic community services that enhance the quality of life in Indian country, such as construction and/or reconstruction of roads, bridges, docks and trails. The TTP replaces the former Indian Reservation Roads (IRR) program. Note that this program is the same as the DOI BIA TTP, although DOT can additionally provide strategic planning.

Eligible Applicants: Federally recognized Tribes.

Funding Range: In MAP-21, the TTP is authorized at $450 million/year and funds are distributed through a statutory formula. The federal share is 100%.

Program Activities: Eligible uses for TTP funds are identified in 23 USC 202(a). These include transportation planning, design, construction, and maintenance of roads and bridges as well as any other project that would be eligible under Title 23. The project must be on or for a facility that provides access to or is located within tribal land. The planning and construction of emergency escape or relocation routes are eligible activities.

Additional Information: DOT: http://flh.fhwa.dot.gov/programs/ttp/;
BIA: http://www.bia.gov/WhoWeAre/BIA/OIS/Transportation/index.htm

DOT – Federal Transit Administration (FTA)

Program Name: Public Transportation on Indian Reservations Program Tribal Transit Program (TTP)

Purpose: Provide grants to Indian tribes for program activities eligible under FTA's Rural Areas Formula Program, 49 U.S.C. 5311.

Eligible Applicants: Federally recognized Indian Tribes and Alaskan Native villages, groups, or communities.

Funding Range: $25 million formula program and $5 million discretionary program. Discretionary funds are made available annually on a competitive basis.

Program Activities: Operating assistance to enable tribes to start new transit services; capital to enable tribal investment in new or replacement equipment; and funding for tribal transit planning studies. Examples of eligible resilience projects may include elevating or relocating transit assets that are located in a special flood hazard area, protecting transit assets vulnerable to high winds, installing mitigation measures that prevent the intrusion of floodwaters into underground segments of a public transportation system, strengthening systems that remove rainwater from public transportation facilities, and other projects that address identified vulnerabilities. However, relocating non-transit assets would not be considered an eligible resilience project.

Additional Information: http://www.fta.dot.gov/grants/15926_3553.html

Environmental Protection Agency (EPA)

Program Name: Alaska Native Village Grant

Purpose: To assist Alaska Native Villages and Alaska rural communities with the construction of new or improved drinking water and wastewater systems.

Eligible Applicants: The applicant must be an unincorporated community that has between 25 and 600 people; a second-class city (no population limits); or a first class city with not more than 600 residents.

Funding Range: Funding varies.

Program Activities: The program is planning, designing and constructing new and or improved water and wastewater infrastructure in various communities throughout the State of Alaska to improve the health and sanitation conditions in rural Alaska.

The ANV Program provides technical support to communities to design and construct water and wastewater systems. It is meant to assist Alaska Native Villages and Alaska rural communities with the construction of new or improved drinking water and wastewater systems. This funding can also be used to provide training and technical assistance in the operations and maintenance of these systems.

Additional Information: http://water.epa.gov/type/watersheds/wastewater/Alaska-Native-Village-and-Rural-Communities-Grant-Program.cfm

Program Name: Clean Water Act Indian Set-Aside Program

Purpose: Provides funding, 2% of the CWA SRF, for wastewater infrastructure to Indian tribes and Alaska Native Villages. The CWISA Program is administered in cooperation with the Indian Health Service (IHS). EPA uses the IHS Sanitation Deficiency System priority lists to identify and select projects for CWISA program funding. To be considered for CWISA Program funding, tribes must identify their wastewater needs to the IHS Sanitation Deficiency System.

Eligible Applicants: All federally recognized tribes, Alaska Native Villages, and tribes on former reservations in Oklahoma are eligible for CWISA Program funds.

Funding Range: Funding varies.

Program Activities: The program is planning, designing and constructing new and or improved wastewater infrastructure in various communities throughout the State of Alaska to improve the health and sanitation conditions in Alaska Native Villages. EPA issues all or the vast majority of funds to the Indian Health Service for Administration.

Additional Information: http://water.epa.gov/type/watersheds/wastewater/clean-water-indian-set-aside-grant-program.cfm

Program Name: Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program

Purpose: Provides funding for eligible applicants for projects that address local environmental and public health issues within an affected community. The CPS Program is designed to help communities understand and address exposure to multiple environmental harms and risks.

Eligible Applicants: Nonprofit organizations including, but not limited to, environmental justice networks; Federally recognized tribal governments; or Tribal organizations (includes American Indian/Alaska Native groups, cooperatives, partnerships, associations).

Funding Range: Up to $120,000.

Program Activities: Funds enable community-based organizations to partner with stakeholders from across industry, government, academia to develop and implement solutions that will significantly address

environmental and/or public health issues at the local level. Projects must use the CPS Model, comprised of seven elements of a successful collaborative partnership, to address local environmental and/or public health issues.

Additional Information: http://www.epa.gov/environmentaljustice/grants/ej-cps-grants.html

Program Name: Environmental Justice Small Grants

Purpose: The purpose of this grant program is to support activities designed to empower and educate communities to understand environmental and public health issues and to identify ways to address these issues at the local level. EPA anticipates awarding up to 25% of fiscal year 2015 awards to fund projects that support community climate resiliency.

Eligible Applicants: Incorporated non-profit organizations including, but not limited to, environmental justice networks, faith based organizations and those affiliated with religious institutions; federally recognized tribal governments; or tribal organizations.

Funding Range: Varies (up to $30,000).

Program Activities: Supports and empowers communities working on solutions to local environmental and public health issues. The program assists recipients in building collaborative partnerships to help them understand and address environmental and public health concerns in their communities. Successful collaborative partnerships involve not only well-designed strategic plans to build, maintain, and sustain the partnerships, but also working towards addressing the local environmental and public health issues.

Additional Information: http://www.epa.gov/environmentaljustice/grants/ej-smgrants.html

Program Name: Indian General Assistance Program (IGAP)

Purpose: Provide General Assistance Program (GAP) grants to federally recognized tribes and tribal consortia for planning, developing, and establishing environmental protection programs. The GAP program is exempt from competition, therefore, applications that meet the stated requirements in program regulations and guidance will be funded if funds are available.

Eligible Applicants: All federally recognized tribes in Region 10 are eligible to receive funds. Tribal consortia that meet the eligibility requirements may also receive funding, if available.

Funding Range: Typically $75,000 - $125,000 per year per grantee in Alaska (special projects not included).

Program Activities: Funding is provided under GAP for the purposes of planning, developing, and establishing tribal environmental protection programs. For example a tribe could use GAP funds to develop a climate change adaptation plan or to establish environmental protection programs that compliment non-environmental protection programs.

Activities related to establishing education, outreach, public participation, compliance assistance, and coordination programs for tribal environmental staff to work effectively with regulated entities are allowable.

Specific examples of allowable activities: climate change vulnerability/risk assessment; climate change preparedness/adaptation program (e.g., zoning rules and regulations; tax incentives; building codes/design standards; utility rates/fee setting; public safety rules and regulations); outreach and education; emergency management powers; community outreach/education programs; developing voluntary or partial environmental protection programs; participating in environmental policy making; coordinating with EPA or other federal agencies on the implementation of federal environmental protection programs; and entering into joint environmental protection programs with neighboring tribal, state, or local environmental agencies.

Additional Information: http://yosemite.epa.gov/R10/TRIBAL.NSF/Grants/IGAP

Program Name: Office of Water Climate Ready Water Utilities Program (CRWU)

Purpose: Assists drinking water, wastewater, and stormwater utilities, in addressing climate change impacts. Through the development of practical and easy-to-use tools, EPA promotes a clear understanding of climate science and adaptation options by translating complex climate projections into accessible formats. This information helps utility owners and operators better prepare their systems for the impacts of climate change.

Eligible Applicants: All water utilities can ask for assistance.

Funding Range: No direct funding. This is a technical assistance program.

Program Activities: Extreme weather events, sea level rise, shifting precipitation patterns and temperature variability, all intensified by climate change, have significant implications for the sustainability of the water sector. By planning for, assessing and adapting to these challenges, the water sector can fulfill their public health and environmental missions and begin the process of becoming climate ready.

Additional Information: http://water.epa.gov/infrastructure/watersecurity/climate/index.cfm

Program Name: Safe Drinking Water Act (SDWA) Tribal Set-Aside Program

Purpose: Provides grants to Indian Tribes, Alaska Native Villages, and to the State of Alaska for the benefit of the native villages. The grant funds are used to address the most significant threats to public health associated with Public Water Systems that serve Indian Tribes. Most types of projects that improve the health of the public being served by the public water system are eligible for funding, 2% of the SDWA State Revolving Fund.

Eligible Applicants: Any federally recognized Indian tribe is eligible to receive a project grant through the program. Eligible systems must serve tribes or Alaskan Native Villages, though they can be owned by someone other than the tribe. Private systems are also eligible.

Funding Range: Funding varies.

Program Activities: The program is planning, designing and constructing new and or improved drinking water infrastructure in various communities throughout the State of Alaska to improve the health and sanitation conditions in Alaska Native Villages. Funds may also be used to conduct project feasibility studies, engineering design work, and for project administration. EPA issues all or the vast majority of funds to the Indian Health Service for Administration.

Additional Information: http://water.epa.gov/grants_funding/dwsrf/allotments/tribes.cfm

Department of Health and Human Services (HHS)

Program Name: Administration for Children and Families (ACF) / Administration for Native Americans (ANA) Environmental Regulatory Enhancement

Purpose: To provide funding for the costs of planning, developing, and implementing programs designed to improve the capability of tribal governing bodies to regulate environmental quality pursuant to federal and tribal environmental laws.

Eligible Applicants: Federally recognized Indian tribes; Consortia of Indian tribes; Incorporated non-federally recognized tribes; Incorporated state-recognized tribes; Alaska Native villages, as defined in the Alaska Native Claims Settlement Act (ANCSA) and/or non-profit village consortia; Non-profit Alaska Native Regional Corporation/Associations in Alaska with village specific projects; Other tribal or village organizations or consortia of Indian tribes; and Tribal governing bodies (IRA or traditional councils) as recognized by the Bureau of Indian Affairs.

Funding Range: $300,000 per Budget Period.

Program Activities: The ERE program supports the principle that projects must follow tribal cultural preservation and natural resource management priorities in order to achieve environmentally healthy, sustainable Native American and Alaska Native communities. The Administration for Native Americans (ANA) is therefore interested in supporting locally designed projects that strengthen tribal environmental regulatory programs in a manner consistent with the goals of native communities. Program areas of interest for this FOA include, but are not limited to, the following:

Providing training and education to employees responsible for enforcing, or monitoring compliance with, environmental quality laws; Developing laws, regulations, and ordinances to protect the environment; Enforcing and monitoring environmental quality laws, regulations, and ordinances; Establishing baseline condition for regulatory purposes; Informing the community about regulations and environmental

stewardship; Building the technical and program capability of the tribe or organization to perform essential environmental program functions to meet tribal and federal regulatory requirements; Establishing demonstration projects to exhibit technologies, which can lead to compliance with environmental regulations.

Additional Information: http://www.acf.hhs.gov/grants/open/foa/index.cfm?switch=foa&fon=HHS-2014-ACF-ANA-NR-0777

Program Name: Center for Disease Control (CDC) / National Center for Infectious Diseases (NCID) / Arctic Investigations Program (AIP)

Purpose: AIP's mission is the prevention of infectious diseases in people of the Arctic and sub-Arctic. AIP places a special emphasis on diseases of high incidence and concern among the Alaska Native and other northern indigenous peoples. AIP conducts infectious disease surveillance, evaluate prevention services, and conduct applied research in collaboration with our partners.

Eligible Applicants: N/A

Funding Range: Intramural.

Program Activities: AIP focuses its research on priority areas that are of regional importance. These priority areas include: Surveillance in Alaska; Elimination of health disparities; Emerging infectious diseases; Preparedness and response; Circumpolar health; Water and sanitation. Focusing on these priority areas allows AIP to achieve its mission of preventing infectious diseases in the Arctic and sub-Arctic. These research priorities also provide a platform for strong partnerships, which combine CDC subject-matter expertise with local knowledge and community involvement. By working together, AIP has become a national and international research leader.

Additional Information: http://www.cdc.gov/ncezid/dpei/aip/

Program Name: CDC – National Institute for Occupational Safety and Health (NIOSH) American Indian/Alaska Native Program

Purpose: Collaborate with American Indian and Alaska Native (AI/AN) communities, organizations and partners to provide occupational safety and health (OSH) support.

Eligible Applicants: Tribal representatives, tribal employers, or their designees in need of occupational safety and health support can contact CDC/NIOSH directly to access a variety of programs.

Funding Range: N/A

Program Activities: Addresses occupational safety and health in tribal communities. NIOSH provides technical expertise in OSH through field studies and investigations, conducts health hazard evaluations (HHEs) and fatality investigations, and provides resources on specific OSH topics. We can offer technical assistance (tribal representatives, tribal employers/employees, and their designees). These include Health Hazard Evaluations, Fatality Investigations, and safety program support.

Additional Information: http://www.cdc.gov/niosh/

Program Name: CDC –NIOSH Climate Change Initiative

Purpose: Ensure current, emerging, and anticipated worker safety and health issues associated with climate change are appropriately identified and prioritized, and to determine the most important actions that are appropriate for CDC/NIOSH to address. Can provide technical assistance regarding occupational safety and health issues.

Funding Range: No direct funding, no cost for technical assistance.

Program Activities: Promote and coordinate intramural and extramural research, support and help facilitate other CDC/NIOSH initiatives with climate change implications, establish research priorities, recommend appropriate policies to CDC/NIOSH Leadership, interact with other agencies and organizations involved with climate change and participate on standard setting or technology development committees and work groups; Prepare and publish communication products regarding worker safety and health and climate change; Coordinate the provision of occupational safety and health related technical assistance to communities affected by climate change.

Additional Information: http://www.cdc.gov/niosh/topics/climate/default.html

Program Name: National Institute of Health (NIH) / National Institute of Environmental Health Sciences (NIEHS) Alaska Community Action on Toxics - Protecting the Health of Future Generations: Assessing and Preventing Exposures

Purpose: This community-based participatory research project investigates exposures to two classes of emerging endocrine-disrupting chemicals (EDCs) with the Yupik people of St. Lawrence Island (SLI) in the *Alaskan* Arctic. Exposure to POPs from both distant and local sources is a trend in the Arctic that is likely to increase due to increased global use and production of EDCs and climate warming. The aim of this exposure assessment is to provide information, ownership of data, and training for the people of SLI so that they can plan and participate in public health actions to reduce environmental health risks.

Eligible Applicants: Yupik people of St. Lawrence Island (SLI) in the Alaskan Arctic.

Funding Range: N/A

Program Activities: The purpose of this project is to initiate research partnerships that work in collaboration with the two Yupik villages of SLI to assess multiple exposure routes of two emerging EDCs-polybrominated diphenyl ethers (PBDEs) and perfluorinated compounds (PFCs). The project will assess exposures to PBDEs and PFCs in surface waters through analyses of contaminant levels and biomarkers for xenobiotic chemicals in the threespine stickleback fish. The research team will also analyze household dust for PBDEs and PFCs. Because the Yupik people of SLI depend on the harvest of wild foods to sustain them and their way of life, the research team will analyze levels of PBDEs and PFCs in traditional foods which are likely a major exposure pathway due to the biomagnification of POPs in marine mammals and fish that are critical components of the Yupik diet. This study will include a human

biomonitoring component in order to assess levels of PBDEs and PFCs in human blood serum in relation to measures of thyroid health.

Finally, the research team collaborates with the leadership, elders, and youth of SLI to develop measures to prevent and mitigate environmental exposures through community educational programs and public policy actions, including community-based research institutes for college credit, health fairs for all community members, and workshops for health care providers.

Additional Information:
http://tools.niehs.nih.gov/portfolio/index.cfm/portfolio/grantDetail/grant_number/R01ES019620

Program Name: NIH / NIEHS Research to Action

Purpose: Bring together community members and environmental and occupational health researchers to investigate the potential health risks of environmental and occupational exposures that are of concern to the community. The overall goal is to support changes to prevent or reduce exposure to harmful environmental exposures and improve the health of a community.

Eligible Applicants: All projects must include at least one research scientist in environmental or occupational health sciences in addition to at least one member of a community-based organization (CBO) who works directly and regularly with the affected community. The partnership between the research scientist and CBO should be equitable and draw upon the unique strengths that each brings to the partnership. Alaska Native and Native Hawaiian Serving Institutions encouraged to apply.

Funding Range: Direct costs must be less than $500,000 in any year, and need to reflect actual needs of the proposed project. The maximum period is 5 years.

Program Activities: Data collection, translation of research into public health action, and project evaluation are all required. Information collected will be translated into public health action using a variety of strategies; applicants must develop an education, outreach, prevention or intervention program(s) designed to improve overall understanding of the problem amongst community members, healthcare professionals or policymakers and to promote actions that will prevent or reduce harmful environmental / occupational exposures and improve human health. Finally, applicants must implement an evaluation plan to assess project outputs and impacts relevant to the proposed project's goals and objectives.

Additional Information:
http://www.niehs.nih.gov/research/supported/dert/programs/peph/prog/rta/index.cfm

Program Name: NIH/NIEHS The Center for Indigenous Environmental Health Research

Purpose: Partner with American Indian and Alaskan Native communities to build capacity to evaluate environmental health exposures, increase environmental health literacy and resilience, and inform program and policy development. The Center's Community Engagement Core will collaborate with

American Indian and Alaska Native (AI/AN) communities to develop culturally-relevant policies and assets-based programs that reinforce resilience to mitigate adverse health effects.

Eligible Applicants: N/A

Funding Range: N/A

Program Activities: The specific aims of the CEC are: 1) Dialogue: To equitably engage AI/AN stakeholders and CIEHR members for the ethical and culturally-appropriate translation and application of Center findings; 2) Knowledge: To strengthen the environmental health literacy (EHL) of AI/AN leaders, policy-makers and community members; 3) Action: To strengthen community resilience and capacity to promote environmental health in AI/AN communities on tribal lands and in urban settings; and 4) Evaluation: To assess the effectiveness of the CEC activities and contributions to the mission of the Center. The CEC will achieve the aims by utilizing long-term partnerships with tribal, rural, and urban AI/AN communities. The CEC will also build on the knowledge, lessons learned, strategies, and resources from the two established Centers located at the same institution: the Southwest Environmental Health Sciences Center and Center for American Indian Resilience. All CEC strategies and activities will be informed by community-based participatory research (CBPR) principles, which have been shown to be effective in AI/AN communities. Major strategies will include: 1) guiding the development of Community Advisory Boards (CABs) for each proposed research project and pilot projects; 2) giving presentations at tribal meetings, AI/AN health events, regional forums and national conferences; 3) conducting baseline assessments of EHL, implementing EHL community interventions and testing effectiveness; 4) developing and administering CBPR training to tribal leaders, community members, and researchers; 5) identifying and implementing strategies for enhancing community assets and resilience that improve health, build community capacity, and foster policy change; and 6) conducting short, mid, and long-term evaluation of CEC activities. The CEC will collaborate with the CABs and AI/AN partners to disseminate and translate successful research outcomes to tribal leadership, local communities, regional and national AI/AN forums, and scientific audiences to reduce environmental health risks and build AI/AN resilience across the U.S.

Additional Information:
http://projectreporter.nih.gov/project_info_description.cfm?aid=8994391&icde=25964664&ddparam=&ddvalue=&ddsub=&cr=3&csb=default&cs=ASC

Department of Housing and Urban Development (HUD)

Program Name: Community Development Block Grant

Purpose: To provide funding to metropolitan cities, urban counties and states to support their housing and community development strategies to develop viable urban communities.

Eligible Applicants: Funds are allocated by formula to metropolitan cities, urban counties and States.

Funding Range: Annual formula grants are provided to Alaska's two CDBG grantees – the State of Alaska and the Municipality of Anchorage.

Program Activities: Develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low-and moderate-income persons.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment

Program Name: Emergency Solutions Grants Program

Purpose: To provide grant funds to State and local governments for the rehabilitation or conversion of buildings for use as emergency shelter for the homeless, for the payment of certain expenses related to operating emergency shelters, for essential services related to emergency shelters and street outreach for the homeless, and for homelessness prevention and rapid rehousing.

Eligible Applicants: The homeless, homelessness prevention and rapid re-housing.

Funding Range: Annual formula grants for the State of Alaska and the Municipality of Anchorage.

Program Activities: Rehabilitation or conversion of buildings for use as emergency shelter for the homeless, for the payment of certain expenses related to operating emergency shelters, for essential services related to emergency shelters and street outreach for the homeless, and for homelessness prevention and rapid re-housing.

Additional Information: portal.hud.gov/hudportal/HUD?src=/hudprograms/esg

Program Name: Indian Community Development Block Grant

Purpose: Development of viable Indian and Alaska native communities, including decent housing, a suitable living environment, and economic opportunities, principally for persons of low and moderate income.

Eligible Applicants: Federally-recognized Tribes or Indian Organizations on behalf of Federally-recognized Tribes. For the standard ICDBG program, applicant must submit an application under the annual Notice of Funding Availability (NOFA). Applications for imminent threat grants are processed on a first come, first serve basis.

Funding Range: The Alaska Office of Native American Programs has an estimated ICDBG allocation for FY2015 of $6,500,000 for grant awards. The ICDBG program also has a national set-aside of approximately $3,500,000 to fund Imminent Threat applications.

Program Activities: The competitive ICDBG program may be used for new construction, rehabilitation, and acquisition of residential units and public facilities as well as housing services, economic development projects. There is also a national set-aside for ICDBG Imminent Threat (IT) grants that are intended to alleviate or remove threats to health or safety as described at 24 CFR Part 1003, subpart E.

These grants provide a solution to problems of an urgent nature that were not evident at the time of the ICDBG Single Purpose funding grant cycle or require immediate action. These are non-competitive grants up to $450,000 ($900,000 for Presidentially-Declared Disasters) on a first come first serve basis. 70 percent of each grant must support activities that benefit low and moderate income persons.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Mortgage Insurance for Disaster Victims – 203(h)

Purpose: This program provides mortgage insurance to protect lenders against the risk of default on mortgages to qualified disaster victims.

Eligible Applicants: Eligible customers are anyone whose home has been destroyed or severely damaged in a Presidential declared disaster area.

Funding Range: No down payment is required. The borrower is eligible for 100 percent financing. Closing costs and applicable fees must be paid according to program requirements.

Program Activities: Insure mortgages.

Additional Information: portal.hud.gov/hudportal/HUD?src=/hudprograms/mifdv_section203h

Program Name: Native American Housing and Self-Determination Act (NAHASDA) - Indian Housing Block Grant Program

Purpose: Supports a range of affordable housing activities on Indian reservations and Indian areas.

Eligible Applicants: Federally-recognized Tribes and their Tribally Designated Housing Entities are eligible to participate in this program.

Funding Range: Annual formula block grant to Indian Tribes and/or TDHEs. Alaska recipients received $94,588,589 State-wide in FY 2015 for the Indian Housing Block Grant program.

Program Activities: IHBG funding can be used for a variety of activities including new construction, rehabilitation, acquisition, housing services, and crime prevention. The Title VI loan guarantee program can be used to leverage all the above activities with a private market loan.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Section 184 Loan Guarantee Program

Purpose: Provides homeownership opportunities to Native American living on trust, restricted, and simple fee land.

Eligible Applicants: Native Americans, Tribes, or Tribally Designated Housing Entities.

Funding Range: Varies.

Program Activities: This program offers HUD approved loan guarantees to private sector lenders who make home mortgage loans to eligible participants.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Title VI Loan Guarantee Program

Purpose: To obtain financing for up to five times the amount of the Tribe's annual NAHASDA IHBG.

Eligible Applicants: Federally Recognized Tribes and their Tribally Designated Housing Entities are eligible to participate in this program.

Funding Range: Varies.

Program Activities: Financing can be used for any affordable housing purpose in accordance with an approved Indian Housing Plan.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

US Amy Corps of Engineers (USACE)

Program Name: Continuing Authorities Program (CAP)

Purpose: Plan, design, and construct certain flood risk management and navigation improvements without specific congressional authorization. The basic objective of this program is to allow the Corps to respond more quickly to problems or needs where the apparent project scope and costs are small.

Eligible Applicants: State, Local, and Tribal Governments and ANCSA Corporations.

Funding Range: The amount of Federal participation is limited by Congress, and varies for each individual authority, however it is typically $5 million Federal, cost shared 65% Federal, 35% Non-Federal.

Program Activities: Several authorities exist under CAP which allow the Corps to assist communities with aquatic ecosystem, flood damage reduction, small navigation, and emergency streambank and shoreline protection projects. An example of the type of work supported by this program is the construction of a small revetment at Shishmaref to reduce risks of coastal erosion.

Additional Information:
http://planning.usace.army.mil/toolbox/agree.cfm?Id=229&Option=Continuing%20Authorities%20Program%20(CAP)&List=Process

Program Name: International and Interagency Support Services

Purpose: Planning, design, and/or construction for others.

Eligible Applicants: Federal State, Local, and Tribal Governments.

Funding Range: No per-project limit, all costs are born by the supported entity.

Program Activities: Interagency and International Services (IIS) is the U.S. Army Corps of Engineers (Corps) program providing technical assistance to non-Department of Defense (DoD) federal agencies, state and local governments, tribal nations, private U.S. firms, international organizations, and foreign governments. Most IIS work is funded on a reimbursable basis. The Corps provides engineering and construction services, environmental restoration and management services, research and development assistance, management of water and land related natural resources, relief and recovery work, and other management and technical services. An example of the type of work provided by this 100% stakeholder-funded program is the initiation of an adaptation study for Denali Commission looking at protect in place versus relocation for 31 communities identified by the GAO.

Additional Information:
http://www.usace.army.mil/Missions/MilitaryMissions/InteragencyInternationalSupport.aspx

Program Name: Planning Assistance to States

Purpose: This program permits the Corps to use its technical planning expertise to supplement and support state and Indian tribe efforts to undertake broad, statewide, comprehensive water resources planning. Upon request, the Corps will cooperate with a state or tribe in the preparation of plans for the development, use and conservation of water and related land resources located within the state or tribal boundaries.

Eligible Applicants: State, Local, and Tribal Governments and ANCSA Corporations.

Funding Range: Cost shared at 50 percent federal, 50 percent non-federal. Limited to $2 million per state or tribe annually. Individual studies generally range from $25,000 to $100,000.

Program Activities: Provides assistance to states, local governments, tribes and other non-federal entities for preparation of comprehensive plans for development and conservation of water and related land

resources. Studies are planning level of detail; they do not include detailed design for project construction.

Additional Information:
http://www.poa.usace.army.mil/Portals/34/docs/civilworks/CAP/Section22PlanningAssistancetoStatesandTribes.pdf (note: each Corps District has information about this program on their website).

Program Name: Tribal Partnership Program

Purpose: Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, to study and determine the feasibility of carrying out projects that will substantially benefit Indian tribes.

Eligible Applicants: Tribal Governments and ANCSA Corporations.

Funding Range: No per-project limit, cost shared based on project purpose.

Program Activities: The U.S. Army Corps of Engineers can conduct studies that will substantially benefit Indian tribes. Topics that could be studied include flood damage reduction, environmental restoration and protection, preservation of natural and cultural resources, and, other projects the Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, determines to be appropriate. This program provides an opportunity to assist with water resources projects that address economic, environmental and cultural resources needs.

Additional Information: http://www.usace.army.mil/Missions/CivilWorks/TribalNations.aspx

US Department of Agriculture (USDA)

Program Name: Business and Industry Loan Guarantee

Purpose: Can assist rural business with construction, repairs, equipment, machinery, inventory and supplies.

Eligible Applicants: For-profit businesses, Nonprofits and cooperatives, Federally-recognized Tribes, Public bodies and Individuals in rural areas of 50,000 people or less.

Funding Range: $5 – $10 million loan limit with certain exceptions.

Program Activities: Eligible activities include but are not limited to: (1) business conversion, enlargement, repair, modernization, or development; (2) purchase and development of land, easements, rights-of-way, buildings, or facilities; (3) purchase of equipment, leasehold improvements, machinery, supplies, or inventory; (4) debt refinancing when new jobs will be created and other conditions are met;

(5) business and industrial acquisitions when the loan will keep the business from closing and/or save or create jobs.

Additional Information: http://www.rd.usda.gov/programs-services/business-industry-loan-guarantees/ak

Program Name: Community Facilities Loans and Grants

Purpose: Finance essential rural community facilities.

Eligible Applicants: Public bodies, non-profits, Tribes.

Funding Range: Grants are limited to 75% of project cost but average about $30,000 due to limitation of funding. No loan limit.

Program Activities: Funds can be used to purchase, construct, and / or improve essential community facilities, purchase equipment and pay related project expenses.

Additional Information: http://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program/ak

Program Name: Electric Loans

Purpose: Build and repair electric infrastructure.

Eligible Applicants: Electric co-ops and other utilities (primarily).

Funding Range: No loan limit.

Program Activities: Funds may be used to finance electric infrastructure for: maintenance; upgrades; expansion; replacement of distribution, sub transmission and headquarters (service and warehouse) facilities; energy efficiency; and renewable energy systems.

Additional Information: http://www.rd.usda.gov/programs-services/electric-infrastructure-loan-loan-guarantee-program

Program Name: Rural Business Development Grant

Purpose: Facilitate the development of small and emerging business.

Eligible Applicants: Public bodies, non-profits and tribes.

Funding Range: $50,000 - 100,000 maximum grant (depending on activity type).

Program Activities: Congress historically has mandated a portion of this program's funding specifically for Federally Recognized Tribes.

Additional Information: http://www.rd.usda.gov/programs-services/rural-business-development-grants/ak

Program Name: Rural Energy for America Loans and Grants

Purpose: Purchase or install renewable energy systems or make energy efficiency improvements.

Eligible Applicants: Agricultural producers and rural small businesses.

Funding Range: Loan guarantees to $25M; Grants to $250,000 for energy efficiency improvements or $500,000 for renewable energy systems.

Program Activities: Funds may be used for the purchase, installation and construction of renewable energy systems, such as: Biomass (for example biodiesel and ethanol, anaerobic digesters, and solid fuels); Geothermal for electric generation or direct use; Hydropower below 30 megawatts; Hydrogen; Small and large wind generation; Small and large solar generation; Ocean (tidal, current, thermal) generation.

Funds may also be used for the purchase, installation and construction of energy efficiency improvements, such as: High efficiency heating, ventilation and air conditioning systems (HVAC); Insulation; Lighting; Cooling or refrigeration units; Doors and windows; Electric, solar or gravity pumps for sprinkler pivots; Switching from a diesel to electric irrigation motor; Replacement of energy-inefficient equipment.

Additional Information: http://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency/ak

Program Name: Sewer, Water, Solid Waste Loans and Grants

Purpose: Provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.

Eligible Applicants: This program assists qualified applicants that are not otherwise able to obtain commercial credit on reasonable terms. Eligible applicants include: Most State and local governmental entities, Private non-profits and Federally-recognized Tribes.

Funding Range: Grants are limited to 75% of project cost. No loan limit.

Program Activities: Funds may be used to finance the acquisition, construction or improvement of: drinking water sourcing, treatment, storage and distribution; sewer collection, transmission, treatment and disposal; solid waste collection, disposal and closure; and storm water collection, transmission and disposal.

Additional Information: http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program/ak

Program Name: Single Family Direct and Guaranteed Loans

Purpose: Finance the purchase of homes for rural residents.

Eligible Applicants: Low and very low income individuals in rural areas of 35,000 people or less.

Funding Range: The maximum loan amount an applicant may qualify for will depend on the applicant's repayment ability. The applicant's ability to repay a loan considers various factors such as income, debts, assets and the amount of payment assistance applicants may be eligible to receive. Regardless of repayment ability, applicants may never borrow more than the Area's Loan Limits (plus certain costs allowed to be financed) for the county in which the property is located.

Program Activities: Funds can be used to build, repair, renovate or relocate a home, or to purchase and prepare sites, including providing water and sewage facilities.

Additional Information:
Single Family Direct Loan: http://www.rd.usda.gov/programs-services/single-family-housing-direct-home-loans/ak
Single Family Guaranteed Loan: http://www.rd.usda.gov/programs-services/single-family-housing-guaranteed-loan-program/ak

Program Name: Single Family Repair Loans and Grants

Purpose: Finance repair of homes.

Eligible Applicants: Very low income homeowners in rural areas. Grants are only available to very-low income homeowners in rural areas that are at least 62 years old.

Funding Range: Loans up to $20,000 at 1%, grants up to $7,500. Loan grant combinations up to $27,500 in certain circumstances.

Program Activities: Loans may be used to repair, improve or modernize homes or remove health and safety hazards. Grants must be used to remove health and safety hazards.

Additional Information: http://www.rd.usda.gov/programs-services/single-family-housing-repair-loans-grants

Program Name: Telecom Loans

Purpose: This program provides financing for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.

Eligible Applicants: Most entities that provide telecommunications in qualified rural areas including: State and local governmental entities, Federally Recognized Tribes, Non-profits, including Cooperatives and limited dividend or mutual association and For-profit businesses (must be a corporation or limited liability company).

Funding Range: No loan limit.

Program Activities: Funds may be used to finance broadband capable telecommunications service: Improvements; Expansions; Construction; Acquisitions (in certain cases); Refinancing (in certain cases).

Additional Information: http://www.rd.usda.gov/programs-services/telecommunications-infrastructure-loans-loan-guarantees

APPENDIX E

Mitigation Tracking

- Mitigation Action Implementation Worksheet (Form 6-1)
- Mitigation Action Progress Report (Form 6-2)

MITIGATION ACTION IMPLEMENTATION WORKSHEET

Complete a mitigation action implementation worksheet for each identified mitigation action.

Mitigation Action / Project Title:	
Background / Issues:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits (Losses Avoided):	
Timeline:	
Priority:	
Worksheet Completed By:	*(Name / Department)*

MITIGATION ACTION PROGRESS REPORT

Progress Report Period:	*From Date:*	*To Date:*
Action / Project Title:		
Responsible Agency:		
Contact Name:		
Contact Phone / Email:	*Phone:*	*Email:*
Project Status:	❑ Project Completed ❑ Project Canceled ❑ Project on Schedule Anticipated completion date: _____ ❑ Project Delayed Explain:_____	

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period?

2. What obstacles, problems, or delays did the project encounter, if any?

3. If uncompleted, is the project still relevant? Should the project be changed or revised?

4. Other Comments:

Next Step: What is / are the next step(s) to be accomplished over the next reporting period?

APPENDIX F

Adoption Resolution

Chignik Bay Tribal Council

Resolution No. _____
Tribal Hazard Mitigation Plan Adoption Resolution

WHEREAS, the Chignik Bay Tribal Council hereafter "Tribe" is a federally recognized tribe; and

WHEREAS, the Chignik Bay Tribal Council is the governing body of the Tribe; and

WHEREAS, the Tribe recognizes the threat that natural hazards pose to people and property; and

WHEREAS, the Tribe has prepared a tribal hazard mitigation plan, hereby known as Chignik Bay Tribal Council Tribal Hazard Mitigation Plan [2019 – 2024] hereafter "Plan", dated [DATE] in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Chignik Bay from the impacts of future hazards and disasters; and

WHEREAS adoption by the Tribe demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Tribe, hereby adopts the Plan as an official plan.

CERTIFICATION

The Chignik Bay Tribal Council has adopted this resolution during a meeting held on _____, 2019, in _____, Alaska, with a quorum present.

For ____ Against ____ Abstain ____ Present____ Absent ____

_____ _____
Signature Date

_____
Print Name / Title

_____ _____
Signature Date

_____
Print Name / Title

DRAFT

APPENDIX G

FEMA Approval & THMP Plan Review Tool

FEMA Region 10 Tribal Mitigation Plan Review Tool

The *Tribal Mitigation Plan Review Tool* records how the tribal mitigation plan meets the regulations in 44 CFR §§ 201.7 and 201.5 (if applicable) and offers FEMA plan reviewers an opportunity to provide feedback to the tribal government.

- **Section 1**: The Regulation Checklist documents FEMA's evaluation of whether the plan has addressed all requirements. If plan requirements are not met, FEMA uses each Required Revisions section to indicate necessary changes.
- **Section 2**: The Strengths and Opportunities for Improvement summary identifies plan's strengths as well as areas for improvement as part of the next plan update.

The FEMA mitigation planner must reference the *Tribal Mitigation Plan Review Guide* when completing the *Tribal Mitigation Plan Review Tool*.

<table>
<tr><td>Tribal Jurisdiction:

Native Village of Chignik Bay</td><td colspan="2">Title of Plan:
Chignik Bay Tribal Council
Tribal Hazard Mitigation Plan
[2019 – 2024]</td><td>Date of Plan:

August 2019</td></tr>
<tr><td colspan="2">Tribal Point of Contact:
Debbie Carlson</td><td colspan="2" rowspan="3">Address:

Chignik Bay Tribal Council
PO Box 50
Chignik Bay, AK 99564</td></tr>
<tr><td colspan="2">Title:
Treasurer / Administrator</td></tr>
<tr><td colspan="2">Agency:
Chignik Bay Tribal Council</td></tr>
<tr><td colspan="2">Phone Number:
907-749-2445</td><td colspan="2">Email:
cbaytc@aol.com</td></tr>
</table>

State Reviewer (if applicable):	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region 10		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

Section 1: REGULATION CHECKLIST

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process? [44 CFR § 201.7(c)(1)]	Section 3.1 – 3.2		
A2. Does the plan document an opportunity for public comment during the drafting stage and prior to plan approval, including a description of how the tribal government defined "public"? [44 CFR § 201.7(c)(1)(i)]	Section 3.3		
A3. Does the plan document, as appropriate, an opportunity for neighboring communities, tribal and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? [44 CFR § 201.7(c)(1)(ii)]	Section 3.3.1		
A4. Does the plan describe the review and incorporation of existing plans, studies, and reports? [44 CFR § 201.7(c)(1)(iii)]	Section 3.4		
A5. Does the plan include a discussion on how the planning process was integrated to the extent possible with other ongoing tribal planning efforts as well as other FEMA programs and initiatives? [44 CFR § 201.7(c)(1)(iv)]	Section 3.5		
A6. Does the plan include a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within the plan update cycle)? [44 CFR § 201.7(c)(4)(i)]	Section 4.0 – 4.3		
A7. Does the plan include a discussion of how the tribal government will continue public participation in the plan maintenance process? [44 CFR § 201.7(c)(4)(iv)]	Section 4.1		
ELEMENT A: REQUIRED REVISIONS			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the tribal planning area? [44 CFR § 201.7(c)(2)(i)]	Section 5.1		
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for the tribal planning area? [44 CFR § 201.7(c)(2)(i)]	Section 5.1		

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
B3. Does the plan include a description of each identified hazard's impact as well as an overall summary of the vulnerability of the tribal planning area? [44 CFR § 201.7(c)(2)(ii)]	Section 5.4		
ELEMENT B: REQUIRED REVISIONS			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan include a discussion of the 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 and regulations related to hazard mitigation as well as to development in hazard-prone areas? [44 CFR §§ 201.7(c)(3) and 201.7(c)(3)(iv)]	Section 6.1		
C2. Does the plan include a discussion of tribal funding sources for hazard mitigation projects and identify current and potential sources of Federal, tribal, or private funding to implement mitigation activities? [44 CFR §§ 201.7(c)(3)(iv) and 201.7(c)(3)(v)]	Section 6.2		
C3. Does the Mitigation Strategy include goals to reduce or avoid long-term vulnerabilities to the identified hazards? [44 CFR § 201.7(c)(3)(i)]	Section 6.3		
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with emphasis on new and existing buildings and infrastructure? [44 CFR § 201.7(c)(3)(ii)]	Section 6.4		
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized, implemented, and administered by the tribal government? [44 CFR § 201.7(c)(3)(iii)]	Section 6.5		
C6. Does the plan describe a process by which the tribal government will incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate? [44 CFR § 201.7(c)(4)(iii)]	Section 6.6		
C7. Does the plan describe a system for reviewing progress on achieving goals as well as activities and projects identified in the mitigation strategy, including monitoring implementation of mitigation measures and project closeouts? [44 CFR §§ 201.7(c)(4)(ii) and 201.7(c)(4)(v)]	Section 6.7		
ELEMENT C: REQUIRED REVISIONS			

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT D. PLAN UPDATES			
D1. Was the plan revised to reflect changes in development? [44 CFR § 201.7(d)(3)]	N/A		
D2. Was the plan revised to reflect progress in tribal mitigation efforts? [44 CFR §§ 201.7(d)(3) and 201.7(c)(4)(iii)]	N/A		
D3. Was the plan revised to reflect changes in priorities? [44 CFR § 201.7(d)(3)]	N/A		
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. ASSURANCES AND PLAN ADOPTION			
E1. Does the plan include assurances that the tribal government will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, including 2 CFR Parts 200 and 3002, and will amend its plan whenever necessary to reflect changes in tribal or Federal laws and statutes? [44 CFR § 201.7(c)(6)]	Section 7.0		
E2. Does the plan include documentation that it has been formally adopted by the governing body of the tribal government requesting approval? [44 CFR § 201.7(c)(5)]	Section 7.0		
ELEMENT E: REQUIRED REVISIONS			

2. Enhanced Regulation Checklist **Regulation** (44 CFR § 201.5 Enhanced Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ENHANCED ELEMENT F. STANDARD PLAN REQUIREMENTS			
F1. Does the enhanced plan include all elements of the standard tribal mitigation plan? [44 CFR §§ 201.3(e)(3), 201.5(b), and 201.7]	N/A		
ENHANCED ELEMENT F: REQUIRED REVISIONS			
ENHANCED ELEMENT G. INTEGRATED PLANNING			
G1. Does the enhanced plan demonstrate integration to the extent practicable with other tribal and/or regional planning initiatives and FEMA mitigation programs and initiatives? [44 CFR §§ 201.3(e)(3) and 201.5(b)(1)]	N/A		
ENHANCED ELEMENT G: REQUIRED REVISIONS			
ENHANCED ELEMENT H. TRIBAL MITIGATION CAPABILITIES			
H1. Does the tribal government demonstrate commitment to a comprehensive mitigation program? [44 CFR §§ 201.3(e)(3) and 201.5(b)(4)]	N/A		
H2. Does the enhanced plan document capability to implement mitigation actions? [44 CFR §§ 201.3(e)(3), 201.5(b)(2)(i), 201.5(b)(2)(ii), and 201.5(b)(2)(iv)]	N/A		
H3. Is the tribal government using existing mitigation programs to achieve mitigation goals? [44 CFR §§ 201.3(e)(3), 201.5(a) and 201.5(b)(3)]	N/A		
ENHANCED ELEMENT H: REQUIRED REVISIONS			

2. Enhanced Regulation Checklist **Regulation** (44 CFR § 201.5 Enhanced Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ENHANCED ELEMENT I. HMA GRANTS MANAGEMENT PERFORMANCE			
I1. With regard to HMA, is the tribal government maintaining the capability to meet application timeframes and submitting complete project applications? [44 CFR §§ 201.3(e)(3), 201.5(b)(2)(iii)(A)]	N/A		
I2. With regard to HMA, is the tribal government maintaining the capability to prepare and submit accurate environmental reviews and benefit-cost analyses? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(B)]	N/A		
I3. With regard to HMA, is the tribal government maintaining the capability to submit complete and accurate quarterly progress and financial reports on time? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(C)]	N/A		
I4. With regard to HMA, is the tribal government maintaining the capability to complete HMA projects within established performance periods, including financial reconciliation? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(D)]	N/A		
ENHANCED ELEMENT I: REQUIRED REVISIONS			

Section 2: STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT

INSTRUCTIONS: The purpose of the ***Strengths and Opportunities for Improvement*** section is for FEMA to provide more comprehensive feedback on the tribal mitigation plan to help the tribal government advance mitigation planning. The intended audience is the tribal staff responsible for the mitigation plan update. FEMA will address the following topics:

1. Plan strengths, including specific sections in the plan that are above and beyond the minimum requirements; and
2. Suggestions for future improvements.

FEMA will provide feedback and include examples of best practices, when possible, as part of the *Tribal Mitigation Plan Review Tool,* or, if necessary, as a separate document. The tribal mitigation plan elements are included below in italics for reference. FEMA is not required to provide feedback for each element.

Required revisions from the **Regulation Checklist** are not documented in the **Strengths and Opportunities for Improvement** section. Results from the **Strengths and Opportunities for Improvement** section are not required for Plan Approval.

Describe the mitigation plan strengths areas for future improvements, including areas that may exceed minimum requirements.

- Planning process
- *Hazard identification and risk assessment*
- *Mitigation strategy (including Mitigation Capabilities)*
- *Plan updates*
- *Adoption and assurances*
- *Enhanced Plan - Integrated planning*
- *Enhanced Plan - Tribal government mitigation capabilities (commitment to a comprehensive mitigation program)*
- *Enhanced Plan - HMA grants management performance*