

NATIVE VILLAGE OF EKUK

TRIBAL HAZARD MITIGATION PLAN [2019 – 2024]

**FINAL Revision 1
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Prepared for:

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ACRONYMS AND ABBREVIATIONS

%	Percent
°F	degrees Fahrenheit
BBAHC	Bristol Bay Area Health Corporation
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
Bristol	Bristol Engineering Services Company, LLC
CFR	Code of Federal Regulations
Community	Ekuk
Council	Ekuk Village Council
DCCED	State of Alaska Department of Commerce, Community, and Economic Development
DGGS	Department of Natural Resources, Division of Geological & Geophysical (State of Alaska)
DHS&EM	Division of Homeland Security and Emergency Management
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
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
Tribe	Native Village Of Ekuk
TTSP	Tribal Transportation Safety Plan

ACRONYMS AND ABBREVIATIONS (continued)

UAF	University of Alaska Fairbanks
USACE	US Army Corps of Engineers
USGS	US Geological Survey

EXECUTIVE SUMMARY

The Tribal Hazard Mitigation Plan (THMP) for Ekuk, 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 Native Village of Ekuk (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 Ekuk Village 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.

- Earthquake – Earthquakes occur in the Community and can result in damage to older community structures cause disruptions in groundwater.
- Erosion – The Community is experiencing erosion along the bank on the Nushagak Bay from the cannery to Etolin Point which as required the relocation of homes.
- Flood – Flooding in the Community occurs due to tidal events and floods the whole community which causes damage to homes and the airport.
- Landslide – Landslides occur along the bluff and restricts access to set net sites.
- Severe Wind – High wind events can result in damage to structures, decreased quality of air due to dust, and limits the accessibility of the Community via air and water transportation.
- Tsunami – The population of the Community increases dramatically in the summer months and the Community does not have a way of getting people safely off the beach. Additionally, a tsunami could increase the erosion rate.

- Wildfire – Wildfires destroy subsistence resources, structures, and is a severe risk to human life. Smoke from surrounding wildfires decreases air quality and is harmful to residents.

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.
- Promote recognition and mitigation of all natural hazards that affect the Community.
- Promote cross-referencing of mitigation goals and actions with other tribal planning mechanisms and projects.
- Reduce the possibility of damages due to earthquakes.
- Reduce the possibility of damages due to erosion.
- 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 tsunamis.
- 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.

- Develop a Community emergency plan.
- Educate the Community about personal emergency preparedness.
- Identify location for all planning documents that is easily accessible.
- Maintain a current location for all electronic versions of the planning documents.
- Identify an appropriate erosion control and / or bank stabilization method.
- Finish flood modeling for the Community.
- Provide educational materials to those fishing in effected areas, or potentially affected areas prone to landslides.
- Develop a Community cleanup effort for loose debris.
- Identify location for an emergency building for the Community.

- Educate community residents about good brush removal and fire barriers around homes.

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.

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1.0 INTRODUCTION

Bristol Bay Native Association (BBNA) is an Alaska Native Regional Non-Profit Corporation and tribal consortium. Incorporated under state law, corporation by laws 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 Ekuk Village Council (Council), BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of this Tribal Hazard Mitigation Plan (THMP) for Ekuk, 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 Native Village of Ekuk (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 the east coast of Nushagak Bay, 17 miles south of Dillingham. It is spread out for about 2 miles along a narrow gravel spit that extends from the Ekuk Bluffs in the shape of a hook. The Community lies at approximately 58.816 North Latitude and 158.5608 West Longitude (See Figures 1, and 2). The Community is located in Section 2, Township 16S, and Range 56W along the Seward Meridian. The Community is located in the Bristol Bay Recording District (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 transitional climate zone, characterized by tundra interspersed with boreal forests, and weather patterns of long, cold winters and shorter, warm summers. Fog and high winds are common during winter months. The Bay is ice-free from June through mid-November. (DCCED, 2018). Annual precipitation ranges from 20 to 26 inches. The average winter temperatures range from 4 to 30 degrees Fahrenheit (°F), and the average summer temperatures range from 37 to 66 °F (National Oceanic and Atmospheric Administration [NOAA], November 2013).

2.3 HISTORY

The word Ekuk means "the last village down," reflecting that the Community is the farthest village south on the Nushagak Bay. The village is mentioned in Russian accounts of 1824 and 1828 as Village Ekouk and Seleniye Ikuk. It is thought that the Community was a major Eskimo village at one time. Russians employed Natives as guides for their boats as they navigated up Nushagak Bay to the trading post at Aleksandrovsk after 1818. Before the North Alaska Salmon Company opened a cannery at Ekuk in 1903, many residents had moved to the Moravian Mission at Carmel. In addition, numerous canneries sprang up during 1888 and 1889 on the east and west sides of the bay, which drew many residents away from the village. The Community had a school from 1958 to 1974. Today, the cannery watchman's family are the only year-round residents. In the summer, the village comes alive with cannery crews, commercial fishing, and subsistence activities. Historically a

Yup'ik Eskimo village, the Community is now used only as a summer commercial cannery and subsistence-use site. Many families have set net sites in the Community (DCCED, 2018).

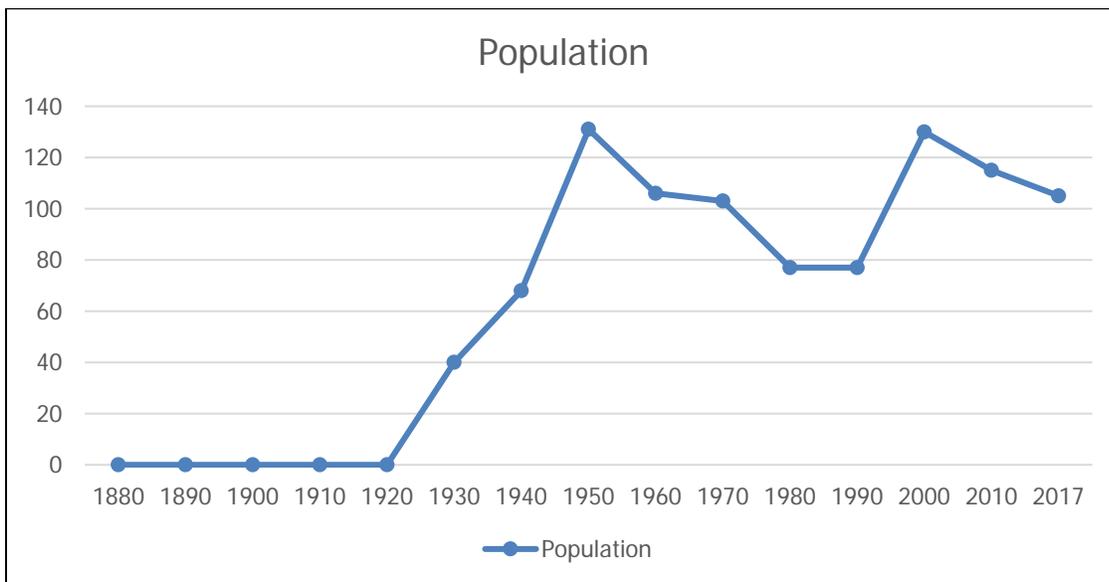
2.4 ECONOMY

The Community has a year round population of two people. These residents watch and care for the cannery during the off-season. However, during the summer months, the population increases with commercial crews, cannery crews, and other subsistence activities. 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 population, supplied by the Community, is 105 people. Exhibit 2-1 depicts a historic representation of the population of the Community from 1880 to 2010. This information is provided by the State of Alaska Department of Commerce, Community, and Economic Development (DCCED) (DCCED, 2018).

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 2 year round residents of which 100 percent (%) is Alaska Native (DCCED, 2018). In the summers, approximately 250 fishermen and 200 cannery operators stay in the village in addition to families that have set nets in the Community. Additionally, several families visit for weeks at a time in the winter if they have good access on winter trails for subsistence activities.

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 on September 24, 2018. The following steps describe the planning process to develop the THMP. 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 September 24, 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
Jennifer Robinette	Environmental Coordinator	Ekuk Village Council
Diane Walker	Community Member	Ekuk Village Council
Gladys John	Community Member	Ekuk Village Council
Brooklynn George	Community Member	Ekuk Village Council
Robery Heyano	President	Ekuk Village 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 September 24, 2018 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.

Four surveys were completed and returned. The residents of the Community identified through the survey that they are most concerned about erosion in the Community (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)

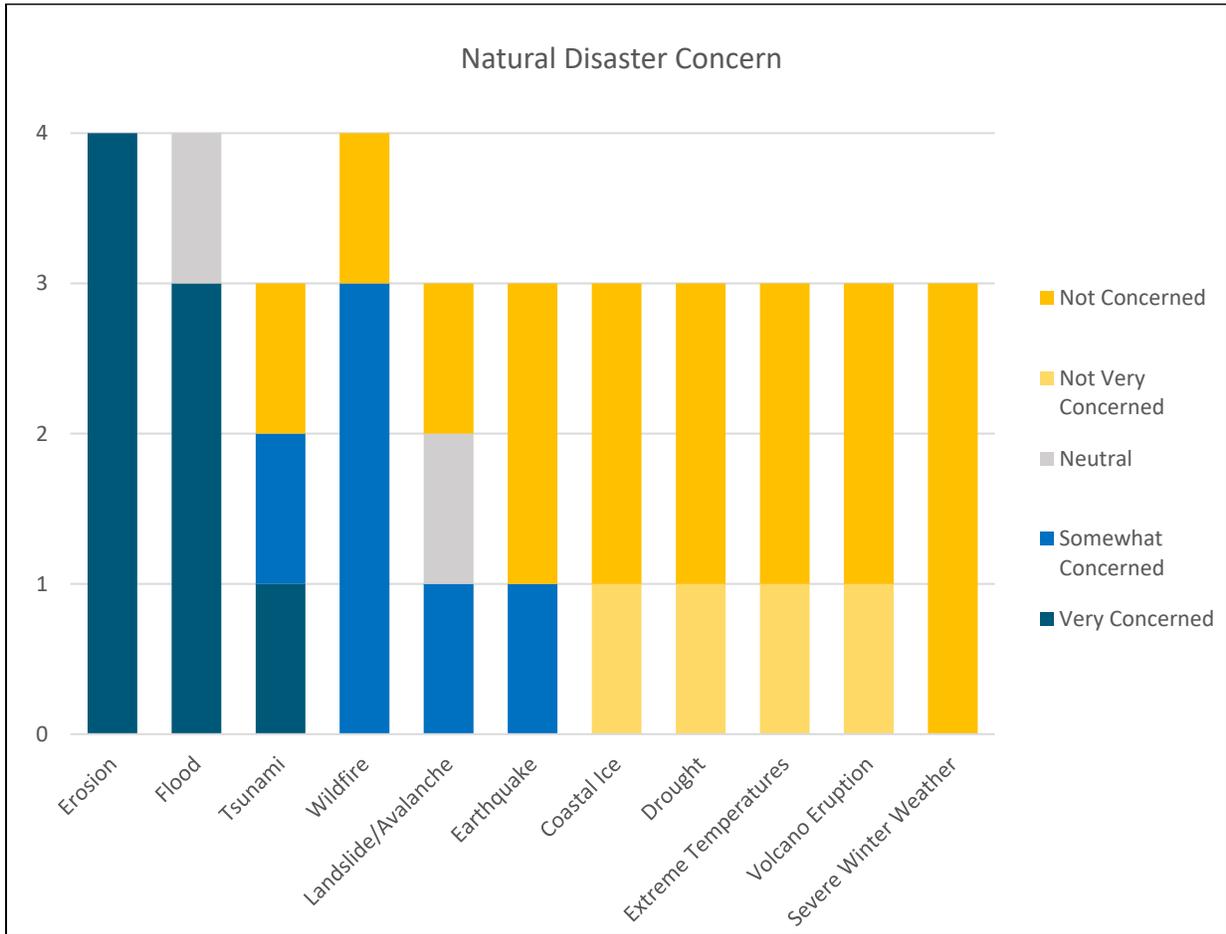
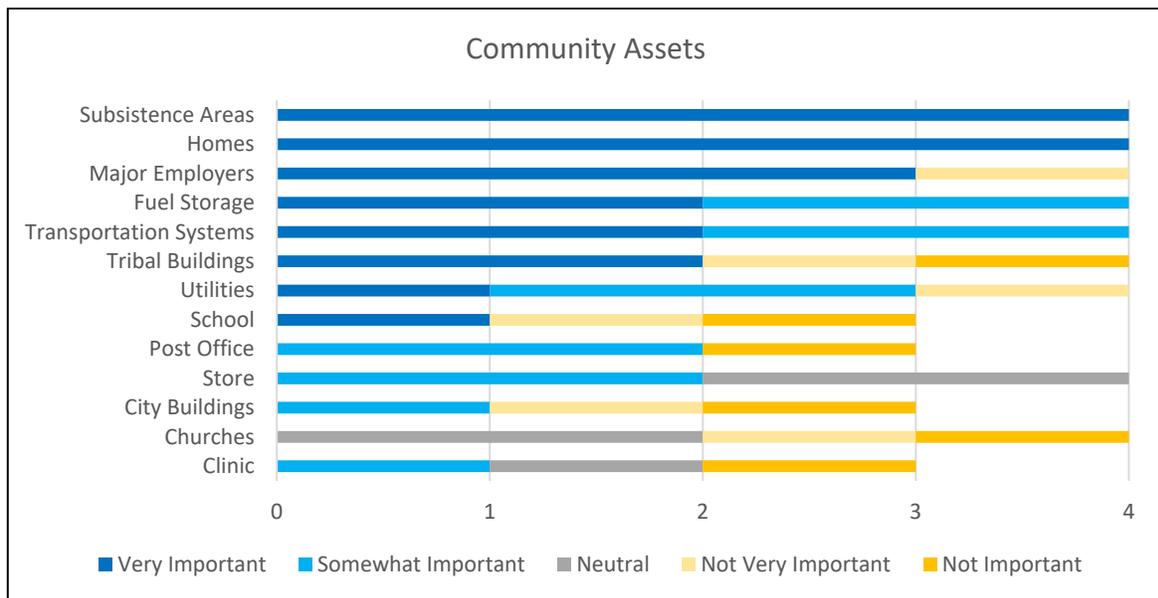


Exhibit 3-2: Community Assets (Survey Question #7)



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	Choggiung	Cameron Poindexter (President)	cameron@choggiung.com
Regional for Profit	Bristol Bay Native Corporation (BBNC)	Jason Metrokin (President)	jmetrokin@bbnc.net
Non Profit Agency	BBNA	Gayla Hoseth (Natural Resources Director)	ghoseth@bbna.com
Economic Development	BBNA	Kristina Andrew (Program Manager)	krandrew@bbna.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	Erosion along the Nushagak Bay is primarily caused by wind driven waves (USACE, February 2009).
Long Range Transportation Plan	This list identifies a list of priority transportation projects which includes the construction of a road between the Community and Clark's Point (Ekuk Village Council, 2018).
BBNA Forest and Fire Management Plan	This report provides information about the areas vegetation, soils, wildlife, forest, and fire management. It also provides regional goals and objectives to preserve and protect the region and details the fire management plan (BBNA, 2014).
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 State of Alaska DHS&EM (DHS&EM, 2017).
Bristol Bay Comprehensive Economic Development Strategy: 2017 – 2021	This report identifies the support of the Ekuk – Clark's Point Road as one of its transportation projects (BBNA, 2018 Update).

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.

The THMP was developed concurrently with the Ekuk Tribal Transportation Safety Plan (TTSP). As a result, safety throughout the community was addressed and discussed in various aspects regarding natural hazards, and safety on all modes of transportation in the Community.

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	<ul style="list-style-type: none"> • Monitor status of actions • Evaluate THMP 	<ul style="list-style-type: none"> • THMP Form 4-1 • THMP Form 4-2
2021	<ul style="list-style-type: none"> • Monitor status of actions • Evaluate THMP 	<ul style="list-style-type: none"> • THMP Form 4-1 • THMP Form 4-2
2022	<ul style="list-style-type: none"> • Monitor status of actions • Evaluate THMP 	<ul style="list-style-type: none"> • 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.

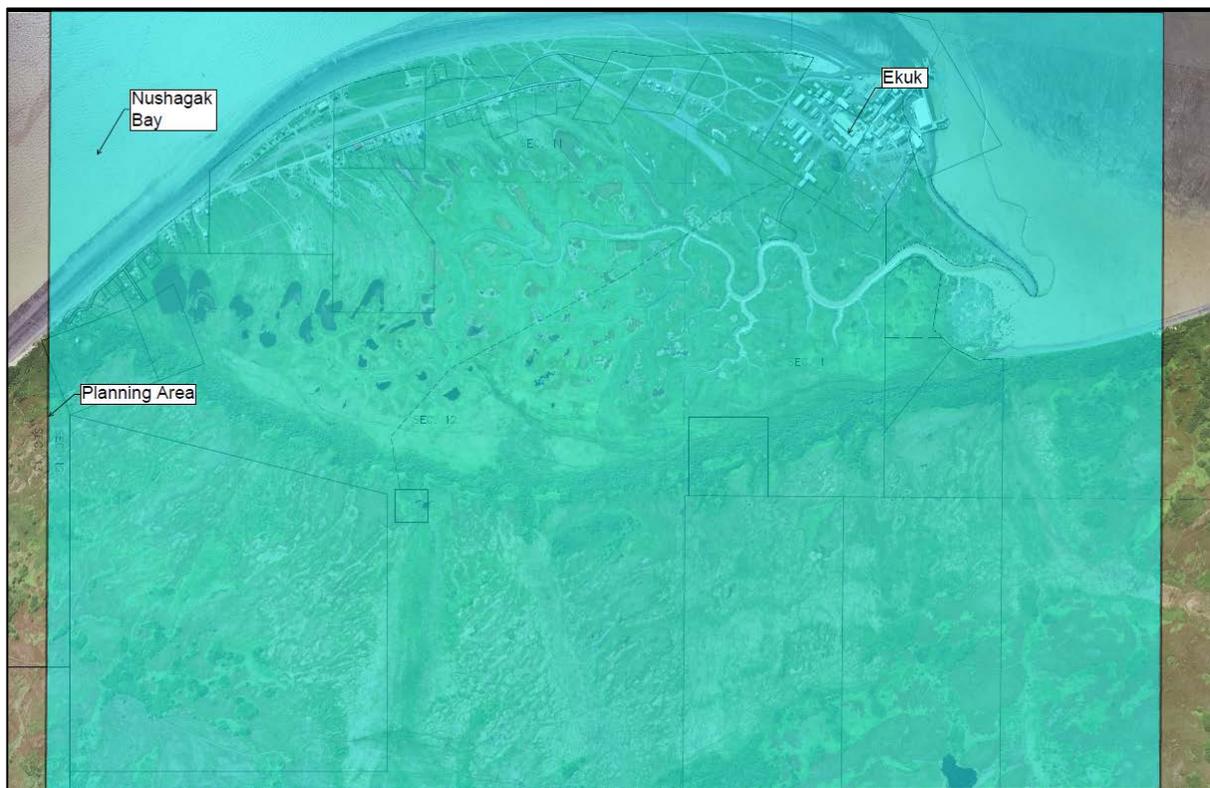
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5.0 RISK ASSESSMENT

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 1, 2 11 and 22 of Township 16 South Range 56 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 13 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, 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	<ul style="list-style-type: none"> Isolated single-point occurrences Less than 10% of planning area
GREEN	Limited	<ul style="list-style-type: none"> Limited single-point occurrences 10% to 25% of planning area
YELLOW	Significant	<ul style="list-style-type: none"> Frequent single-point occurrences 25% to 75% of planning area
RED	Extensive	<ul style="list-style-type: none"> Consistent 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	<ul style="list-style-type: none"> Little to no damage done Slow speed of onset or short duration of event Limited classification on scientific scale (if applicable)
GREEN	Moderate	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • Less than 1% probability of occurrence in the next year • Recurrence interval of greater than every 100 years
GREEN	Occasional	<ul style="list-style-type: none"> • 1% to 10% probability of occurrence in the next year • Recurrence interval of 11 to 100 years
YELLOW	Likely	<ul style="list-style-type: none"> • 10% to 90% probability of occurrence in the next year • Recurrence interval of 1 to 10 years
RED	Highly Likely	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Event has minimal impact on planning area • Two or more criteria fall in lower classifications
YELLOW	Medium	<ul style="list-style-type: none"> • Event’s impacts on the planning area are noticeable but not devastating • Criteria fall mostly in the middle ranges of classifications
RED	High	<ul style="list-style-type: none"> • 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	No	Avalanches do not occur in the Community due to the generally flat terrain.
Drought	No	The Community has not experienced a long term drought as a result of having regular precipitation. However, a drought could affect the cannery.
Earthquake	Yes	Earthquakes occur in the Community, and can result in damage to buildings, and wells.
Erosion	Yes	The Community is situated on Nushagak Bay. The bay is experiencing erosion along the bank from the cannery to Etolin Point. Homes have had to be relocated due to severe erosion.
Extreme Temperatures (Severe Cold & Heat)	No	The Community is seasonally occupied in the summer, and therefore the residents do not experience extreme cold events. The Community is experiencing more severe heat events than normal, but no damage has been done.
Flood	Yes	Flooding occurs due to tidal events. The entire village resides on a flood plain and regularly gets flooded. Flooding causes damage to homes and the airport.
Landslide	Yes	Large slumping of the bluff can occur due to erosion. This affects fishing by cutting off access to set net sites. Vehicles cannot get around the bluff anymore due to the landslide.
Severe Wind	Yes	Strong wind storms occur frequently in the Community. These storms can damage buildings, and reduce access to the Community through air or water transportation. High winds also affect surf and fishing.
Severe Winter Weather	No	The Community is seasonally occupied. No damage has been done due to severe winter weather.
Subsidence	No	Noticable subsidence has not been experienced in the community.
Tsunami	Yes	The Community could be impacted by tsunamis, which could cause catastrophic damage and the loss of the lives because there is no way to get large amounts of people to the top of the bluff.

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

Hazard	Significant (Yes/No)	Explanation
Volcano	No	There are a number of active volcanos along the Alaska Peninsula and Cook Inlet that could deposit ash in the Community or disrupt flights to the Community. The Community does not recall this ever being an issue.
Wildfire	Yes	There have been 11 fires within roughly 18 miles of the Community since 1981, totaling 16,747 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 Earthquake

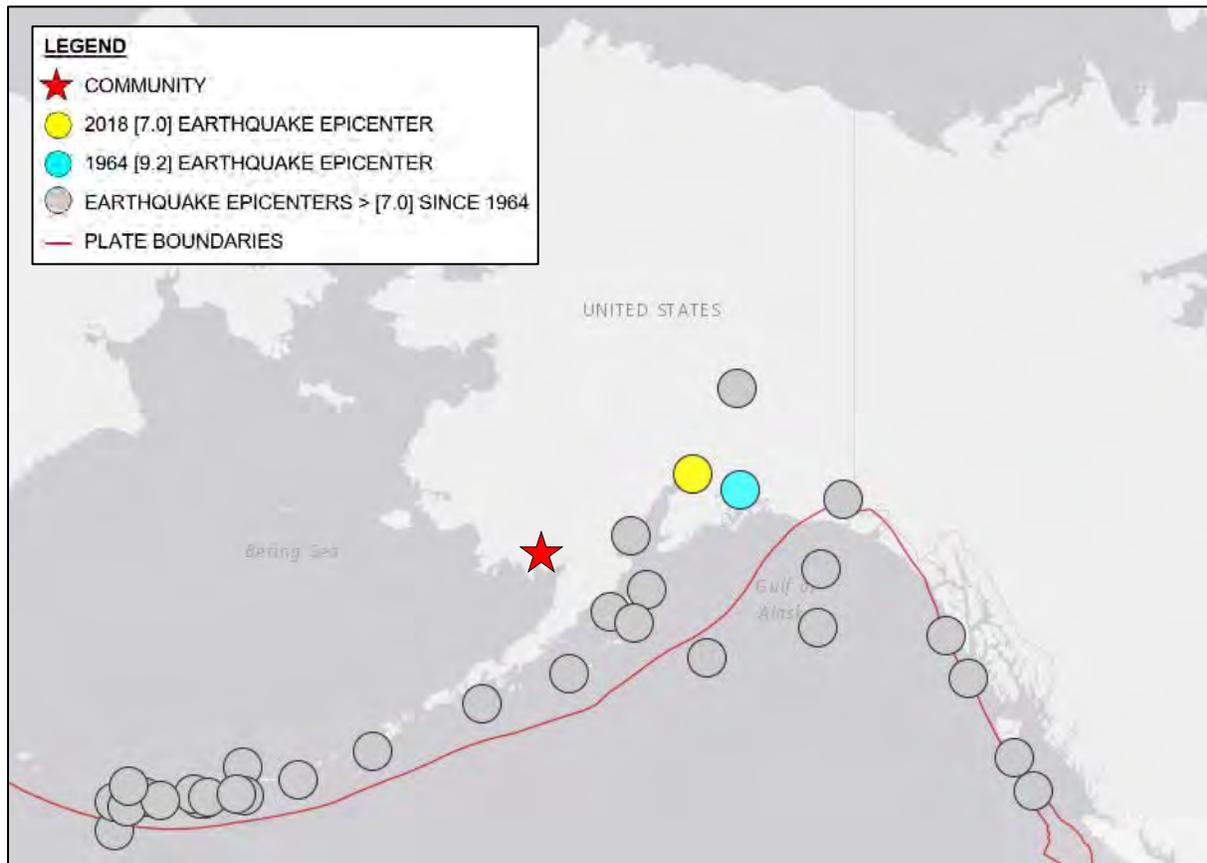
An earthquake is a sudden trembling or movement in the earth's crust due to a sudden release of energy along the edge of the earth's tectonic plates. Earthquakes typically occur without warning. The effects of an earthquake can be felt far beyond the site of its epicenter. The epicenter is the point 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.

5.1.1.1 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 406 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 6.6 on the Richter scale, located 60.9 miles away on the Alaska Peninsula in May 1990. The closest earthquake to occur near the Community above a magnitude 2.5 was a magnitude 2.5 earthquake that occurred 3.8 miles away in April 2011 (USGS, 2018). More historic earthquake information surrounding the community is provided in Section 5.1.2.3.

Exhibit 5-2: Major Earthquakes in Alaska



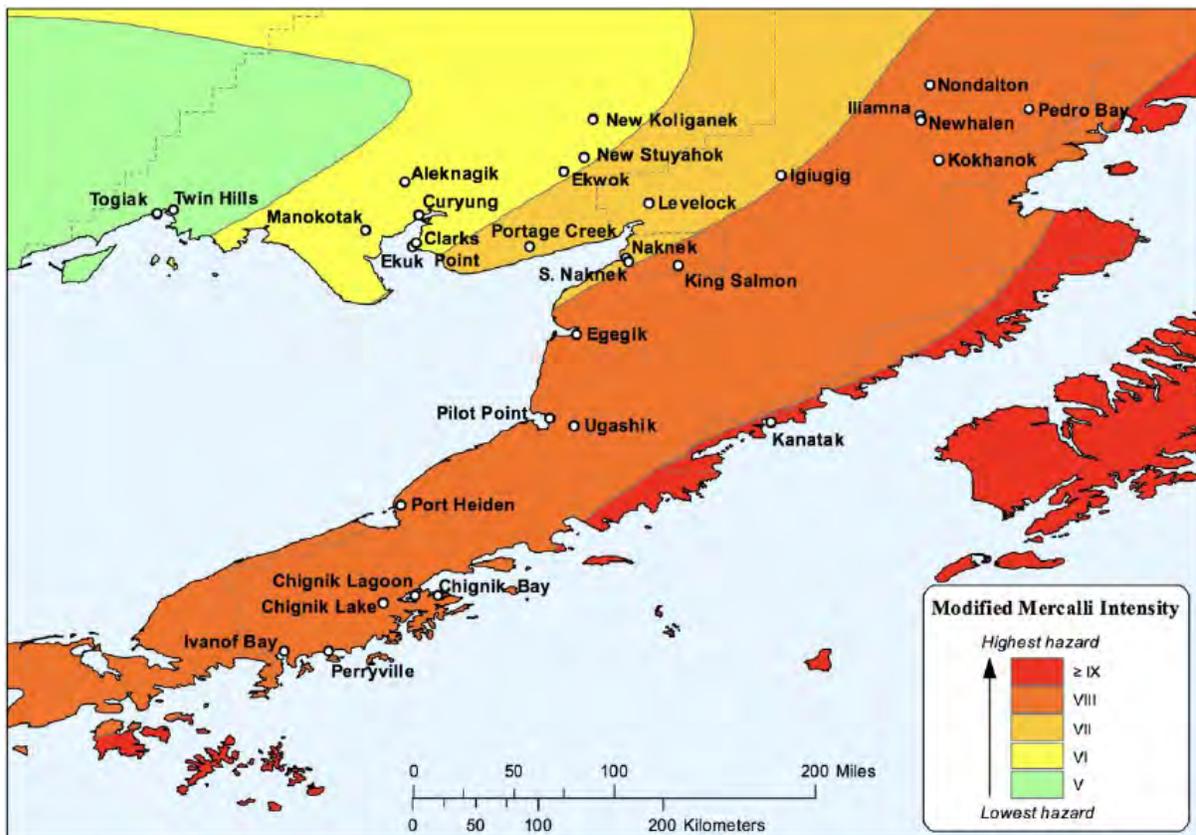
5.1.1.2 Extent

Earthquakes are rarely felt in the Community. Community members have reportedly felt slight tremors from major earthquakes in Alaska, but these earthquakes have not caused

any known damage in the Community. The most severe earthquake felt in the Community was the Great Alaska Earthquake of 1964. Residents described having to evacuate and move uphill due to a tsunami warning. 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 VI MM Intensity, indicating the earthquake risk is relatively low (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 occasionally associated with great earthquakes at distances beyond which the earthquakes 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.	Pictures swing out of place; small objects move; a few objects fall from shelves within the community.	A few instances of cracked plaster and cracked windows within 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 buildings 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.)

Seismic activity can cause damage to older community structures and underground utilities. The largest local concern regarding earthquakes in the Community is disruptions in groundwater. Well water is relied on for drinking water and cannery use. A large earthquake nearby the Community could potentially alter the mineralogy or quality of groundwater.

5.1.1.3 History of Occurrences

The largest earthquake felt in the Community was in 1964. Community members recall moving to higher ground because of the tsunami warnings that were issued but do not recall any damage in the Community. This happened in the winter and they recalled being cold because they were unprepared for such an event.

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 Ekuk (miles)	Location
Apr-2011	2.5	3.8	Bristol Bay
Sep-2018	3.0	4.3	31 kilometer (km) S* of Dillingham
May-2004	3.1	5.0	Bristol Bay
May-2009	2.5	5.2	Bristol Bay
Mar-1997	3.3	11.1	Bristol Bay
Apr-1995	3.1	14.3	Bristol Bay
Sep-2017	2.5	14.6	45 km SSE* of Dillingham
Aug-2011	3.1	24.8	Alaska Peninsula
Feb-2011	3.7	30.2	Alaska Peninsula
Jun-2015	2.8	33.8	51 km WNW* of King Salmon

* South (S), South Southeast (SSE), West Northwest (WNW)

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

Date	Magnitude	Distance from Ekuk (miles)	Location
May-1990	6.6	60.9	Alaska Peninsula
Feb-2003	5.5	61.0	Alaska Peninsula
Jun-2010	4.9	72.2	Alaska Peninsula
Nov-1984	4.6	68.7	Alaska Peninsula
Mar-1976	4.5	65.4	Alaska Peninsula
Jan-2004	4.2	68.9	Alaska Peninsula
Sep-2001	4.2	48.4	Bristol Bay
May-1992	4.2	62.7	Bristol Bay
May-2016	4.1	69.7	20 km S* of King Salmon
Jan-1986	4.1	61.6	Alaska Peninsula

* South (S)

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

Date	Magnitude	Distance from Ekuk (miles)	Location
Sep-2018	3.0	4.3	31 km S* of Dillingham
Feb-2018	2.8	62.4	11 km WSW* of King Salmon
Sep-2017	2.5	14.6	45 km SSE* of Dillingham
Aug-2017	2.5	71.1	36 km S* of King Salmon
May-2017	3.0	53.7	34 km WSW* of King Salmon
Jan-2017	3.0	71.2	75 km SSW* of King Salmon
Sep-2016	2.7	72.8	112 km SW* of King Salmon
Jun-2016	2.6	54.1	67 km ENE* of Dillingham
May-2016	4.1	69.7	20 km S* of King Salmon
Oct-2015	3.2	75.0	33 km S* of King Salmon

* South (S), West Southwest (WSW), South Southeast (SSE), South Southwest (SSW), Southwest (SW), East Northeast (ENE),

5.1.1.4 Probability of Future Events

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

5.1.2 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.

5.1.2.1 Location

The Community experiences gradual erosion along the bank of Nushagak Bay. Significant erosion areas are identified on Figures 1, and 2. Anything apart from gradual loss of land along the bank (such as large areas of sluffing soil) was considered a landslide and is discussed further in Section 5.1.4.

5.1.2.2 Extent

The Community THMP team has classed the area affected by erosion as “extensive.” The erosion of highest concern is the erosion of the bluff to the point where homes and the community’s infrastructure are undermined. Many residents’ homes have already been damaged and some relocated. Other community assets located near erosion areas include public and private cemeteries, the airport, set net sites, and the cannery processing plants. According to a 2007 Erosion Assessment for Ekuk developed Golder Associates Inc, wind driven waves are the primary cause of erosion. The study concluded that the most imminent threat from erosion is the lack of adequate evacuation routes from the beach during storm events (USACE, 2009).

5.1.2.3 History of Occurrences

Erosion is an on-going process. However, particular events can result in notable occurrences of erosion, such as floods. Erosion has been consistent along the bank from the processing plant to Etolin Point. Ekuk Bluff has eroded approximately 125 feet between 1912 – 1981 and another 65 feet from 1981 – 2006. This shows an average of roughly 2.6 feet per year since 1981 (USACE, 2009).

5.1.2.4 Probability of Future Events

Significant erosion is visible along the bluff every year. It is highly likely for erosion to continue to occur in the Community due wind-driven waves in the Nushagak Bay.

5.1.3 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.

5.1.3.1 Location

Areas in the Community at risk of regular flooding are depicted on Figures 1, and 2. FEMA flood maps are not available for the Community. The Community is currently working with the Alaska Division of Geological & Geophysical Surveys (DGGS) and the University of Alaska Fairbanks (UAF) to create preliminary flood maps for the Community. The low-lying areas adjacent to Nushagak Bay have the highest risk. This includes the Airport, set net sites, beach, cannery processing plants, and many of the residents' homes. There have been times when the whole community has been flooded.

5.1.3.2 Extent

The Community has experienced severe flooding in the past. The village used to flood from the creek behind the village. More recently, spring tidal floods have had the largest effect on the Community, affecting many homes and the airport. Although, the areas depicted in Figures 1, and 2 are at the most risk during regular flood events, the extent has been more severe at times, covering the entire village. Surf damage also affects the beach areas which is a large part of the community revenue from set net sites.

5.1.3.3 History of Occurrences

Flooding covered the entire village in the fall of 2018. No land was visible according to residents. People went to the cannery until the flooding subsided. This damaged the airport and several cabins. One cabin lost its pilings and another home has flood level marks from multiple occurrences.

5.1.3.4 Probability of Future Events

It is highly likely flooding will continue to happen in the Community due to the continuing effects of seasonal flooding.

5.1.4 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.

5.1.4.1 Location

Landslides occur in the Community on the bluff. Resident cabins are on the bluff, while the village lies on the low lands (see Figures 1, and 2). Landslides have occurred on the bluff, which cuts off vehicle access to the beach and set net sites.

5.1.4.2 Extent

The bluff has areas with steep slopes. Reportedly, large masses of soil occasionally slough off or topple over along the bluff. The area above has cabins, which could be at risk if the problem persists. The beach area below is important to the community for set-netting. Residents estimate the landslide area to be 25 feet long.

5.1.4.3 History of Occurrences

Landslides along Ekuk Bluff are associated with high rain that saturates the soil. Soil sloughs off every summer at the corner of the bluff, making it a continuous problem. Residents reported that landslides along the bluff cut off access to set net sites which is an economic resource. Additionally, residents reported this to be dangerous because they do not know when it will happen, and they are concerned it will happen when someone is driving near the area.

5.1.4.4 Probability of Future Events

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

5.1.5 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.

5.1.5.1 Location

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

5.1.5.2 Extent

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

Exhibit 5-5: 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 blow structures over.

In the summer and fall months, severe wind conditions produce an unhealthy amount of dust. The airport runway and all of 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 also decreases the ability to evacuate for medical emergencies. These conditions also impact the surf and can make the bay unsafe for fishing.

5.1.5.3 History of Occurrences

According to locals, severe windstorms occur more than once per year, usually in the fall. Airport travel has been impacted for up to 3 days in the past due to high winds

Wind data is not readily available for the Community. However, wind speeds have been recorded in the nearby community of Clarks Point, which is roughly 1.5 miles away. These communities are assumed to experience similar wind speeds although topographic features can magnify wind speeds when present in the area. Therefore, Table 5-9 identifies historical severe wind events recorded in Clarks Point (Weather Underground, 2018).

Table 5-9: Historical Severe Wind Events

Year	Max Wind Speed (mph)	# of Days Above 47 mph
2018	41	0
2017	43	0
2016	41	0
2015	53	1
2014	44	0
2013	38	0
2012	39	0
2011	38	0
2010	69	1
2009	59	3
2008	38	0

5.1.5.4 Probability of Future Events

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

5.1.6 Tsunami

A tsunami is a series of large waves created 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.

5.1.6.1 Location

The lower village site could be impacted by tsunamis.

5.1.6.2 Extent

Tsunamis have not had an impact on the Community to this point. However, should a tsunami occur in the Community it could have an extreme impact.

The greatest concern, should a tsunami occur, is getting people off of the beach to higher ground safely. A tsunami would increase erosion problems that are already occurring along the beach front of Nushagak Bay. This area provides subsistence resources as well as economic resources for community members. The cannery and other cultural assets could potentially be lost due to a tsunami.

5.1.6.3 History of Occurrences

No tsunamis have occurred in the Community. However, residents stated that they occasionally receive tsunami warnings for the community. One resident recalled evacuating to the top of the bluff during the 1964 earthquake.

5.1.6.4 Probability of Future Events

Tsunamis have a low probability to affect the Community. However, residents are concerned due to the impacts a tsunami could have, should one occur.

5.1.7 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.

5.1.7.1 Location

A map of wildfires located in and around the Community since 1939 is provided in Exhibit 5-6. However, wildfires have an impact on the entire tribal planning area (see Exhibit 5-1) due to the impacts of smoke and subsistence resources.

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Exhibit 5-6: Ekuk Fire Map



Source: (Alaska Interagency Coordination Center, 2018)

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5.1.7.2 Extent

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.

The community has a large amount of grass, which could result in a devastating fire in dry conditions. The cannery is the biggest economic asset for the community and is at risk were a major fire to occur in the community.

5.1.7.3 History of Occurrences

Table 5-10 below provides a list of wildfires and their impacts (in acreage) in or around the Community (Alaska Interagency Coordination Center, 2018). A major fire has not occurred in the Community since 1997.

Table 5-10: History of Wildfires

Fire Name	Year	Estimated Impact (Acres)	Distance from Ekuk (Miles)
Ekuk	1997	57	2
Queens	1981	1	7
St-404002	1984	100	10
Kanakanak	2002	0	12
Snake River	2012	16566	13
Igushik	2001	2	13
Igushik	1997	0	16
Dillingham	1997	20	17
Dlg Vfd	2005	0	17
Nerka	1997	0	18
Kanakanak	2003	1	18

5.1.7.4 Probability of Future Events

Wildfires are highly likely to continue 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 2, however, most residents in the Community are seasonal occupants due to the cannery. During fishing season, the population balloons to roughly 450 people. 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.

- Processing Plant
- Beach
- Set Net Sites

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.

- Processing Plant
- Set Net Sites

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
 - St. Nicholas Church
 - Processing Plant
 - Set Net Sites

- Infrastructure
 - Airport
 - Tribally Owned Equipment
 - Roads
 - Trails
 - Community Well
 - Lighthouse
 - Landfill

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.

- Subsistence areas (hunting and berry picking areas)
- Nushagak Bay
- Beach
- Fresh Water Pond

5.3 RISK ANALYSIS

The risk analysis assesses the potential effects of the identified hazards on the vulnerable assets that have been identified. Table 5-11 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 5-11. 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.

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Table 5-11: Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazards						
						Earthquake	Erosion	Flood	Landslide	Severe Wind	Tsunami	Wildfire
<i>Government</i>	5	Lighthouse	N/A	58°48'10.99"N, 158°33'26.86"W	Unknown	x	x	x		x	x	
<i>Community</i>	11	Processing Plant (Ekuk Fisheries) - Seasonal	200	58°48'59.91"N, 158°33'43.26"W	Unknown	x	x	x		x	x	x
	9	Community Well	1	58°48'32.85"N, 158°33'44.76"W	Unknown	x		x		x	x	x
	12	Tribally Owned Equipment	N/A		Unknown	x	x	x		x	x	x
	2	Cemetery	N/A	58°47'56.43"N, 158°33'4.04"W	--		x		x		x	x

Table 5-11 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazards						
						Earthquake	Erosion	Flood	Landslide	Severe Wind	Tsunami	Wildfire
<i>Community Cont. inued</i>	1	St. Nicolas Church Site (ceremonial service)	15	58°47'52.48"N, 158°33'3.83"W	Unknown		x		x		x	
	13	Set Net Sites	250	58°48'16.03"N, 158°33'46.79"W - 58°48'29.63"N, 158°33'54.54"W - 58°48'46.19"N, 158°33'54.52"W	--		x		x	x	x	

Table 5-11 (Continued): Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazards						
						Earthquake	Erosion	Flood	Landslide	Severe Wind	Tsunami	Wildfire
<i>Transportation</i>	6	Airport	N/A	58°48'43.96"N, 158°33'37.41"W	Unknown	x	x	x		x	x	
	3	Trails	N/A	unknown	--		x	x	x		x	x
	10	Official NTTFI Roads	N/A	18.7 miles	\$37.4M		x	x	x	x	x	
<i>Utilities</i>	7	Landfill	1	58°48'16.87"N, 158°33'18.27"W	\$1M			x			x	x
<i>Natural</i>	8	Beach (Along Bluff)	250	58°48'33.52"N, 158°33'54.23"W	--		x		x	x	x	
	4	Fesh Water Pond	N/A	58°48'0.85"N, 158°33'10.88"W	--		x	x			x	

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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).

- Earthquakes – The Community relies on groundwater for drinking water and cannery use. The quality of water could be altered during an earthquake. Damage to older community structures could be caused due to seismic activity.
- Erosion – Property owners have lost land due to erosion along the bluff and the Community's set nets are impacted by erosion along the beach on Nushagak Bay.
- Flood – The entire village, besides some residents' cabins, are situated along Nushagak Bay in low lying areas. Flooding has damaged many parts of the Community including the airport, residences and the cannery.
- Landslides – A large landslide comes off the corner of the bluff area every year and cuts off vehicle access to the beach. This is an evacuation hazard.
- Severe Wind – Damage to structures, has occurred due to severe wind speeds. Severe wind speeds have an impact on the air transportation, and emergency medical evacuations. It also impacts the surf of the Nushagak Bay, making it dangerous for fishing.
- Tsunami – The Community would experience catastrophic damage in the case of a tsunami, and there is not an evacuation route or shelter set in place to get people to higher ground.
- Wildfire – Nearby subsistence areas and resources have been lost due to wildfires. 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.

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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 financial, planning and land management tools, and administrative and technical capabilities. The resources available in the Community are listed below in Table 6-1 and Table 6-2. Expanding upon existing capabilities in the Community to further address mitigation issues is challenging due to the small size of the Community. Increasing these capabilities would require additional funding and personnel. 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 these programs and policies. The Council, and other local partners, will use this plan as a roadmap to a systematic and structured approach to increase the overall mitigation capabilities of the Community. Opportunities for expansion of capabilities will be coordinated and evaluated with each plan review and update.

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	No	--
Land Use Plan	No	--
Wildland Fire Protection Plan	No	--
Emergency Response Plan	No	--

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

Regulatory Tools (ordinances, codes, plans)	(Yes / No)	Comments
Long Range Transportation Plan	Yes	2018, developed by the Council
Tribal Transportation Safety Plan	Yes	2019, developed by the Council
Other Special Plans (e.g. climate change adaptation, coastal zone management)	Yes	Economic Development Plan (2006)
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	No	--
Librarian	No	--
Village Public Safety Officer	No	--
Health Aide	Yes	Bristol Bay Area Health Corporation (BBAHC) (Summer Only)
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	--

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

Staff / Personnel Resources	(Yes / No)	Department / Agency and Position
Staff with education or expertise to assess the jurisdiction's vulnerability to hazards	No	The Tribe hires consultants with this knowledge
Personnel skilled in Geospatial Information System (GIS) and / or HAZUS	No	The Tribe hires consultants with this knowledge
Finance (Grant Writers)	Yes	Tribe, 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	Promote recognition and mitigation of all natural hazards that affect the Community.
3	Promote cross-referencing of mitigation goals and actions with other tribal planning mechanisms and projects.
4	Reduce the possibility of damages due to earthquakes .
5	Reduce the possibility of damages due to erosion .
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 winds .
9	Reduce the possibility of damages due to tsunamis .
10	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 identifications (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

¹Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
1.A	Develop a Community emergency plan.	High	Council	Environmental Coordinator & Administrator	Council / Small Community Emergency Response Plan (SCERP)	2 Years
1.B	Identify an evacuation route for the Community and develop an evacuation plan.	Low	Council	Administrator	FEMA Grant and others	4-5 Year
1.C	Acquire supplies for and assemble emergency boxes.	Medium	Council	Environmental Coordinator & Administrator	Health and Safety Related Grants	1-2 Years
2.A	Educate the Community about personal emergency preparedness.	High	Council	Environmental Coordinator	Council / IGAP	1 Year - Ongoing
3.A	Identify location for all planning documents that is easily accessible.	High	Council	Administrator	Council	2 Years
3.B	Maintain a current location for all electronic versions of the planning documents.	High	Council	Administrator	Council	2 Years
3.C	Conduct a yearly review of the plans and document progress towards their goals and actions.	Medium	Council	Council	Council	2 Years - ongoing
3.D	Include goals and strategies in future planning document updates.	Medium	Council	Council	Council	2 Years - Ongoing

Table 6-4 (Continued): Prioritized Mitigation Actions

¹Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
4.B	Educate the Community about earthquake preparedness.	Medium	Council	Environmental and Administrative	FEMA	2 Years
5.A	Identify an appropriate erosion control and/or bank stabilization method.	High	Council	Environmental Coordinator	FEMA Grant, USACE, and Others	2 – 3 Years
6.A	Finish flood modeling for the Community.	High	Council	Environmental Coordinator/DGGS/UAF	IGAP	6 Months – 1 Year
6.B	Design and install proper drainage features for the Community.	Low	Council	Environmental Coordinator & Administrator	TTP, BBEDC, Others	4 – 5 Years
7.C	Provide educational materials to those fishing in effected areas, or potentially effected areas prone to landslides.	High	Council	Environmental and Administrative	FEMA	2 Years
8.B	Encourage community members to have a backup power source.	Medium	Council	Administrator	To be determined	1 Year
8.C	Develop a Community cleanup effort for loose debris.	High	Council	Environmental and Administrative	IGAP	2 – 3 Years
9.A	Identify location for an emergency building for the Community.	High	Council	Administrator	FEMA	3 Years
9.B	Educate residents about the dangers of tsunamis.	Medium	Council	Administrator	FEMA	3 Years

Table 6-4 (Continued): Prioritized Mitigation Actions

¹Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
10.A	Obtain a mobile water supply.	Medium	Council	Administrator	Health and Safety Grants	3 Years
10.B	Provide brush and grass removal around the Community.	Low	Council	Administrator	BBNA Forestry Program, TTP	2 Years
10.C	Identify and train fire fighters.	Low	Council	Administrator	BBNA Forestry Program	4 – 5 Years
10.D	Educate community residents about good brush removal and fire barriers around homes.	High	Council	Environmental Coordinator	IGAP	1 year and ongoing

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; and
- The department, office, or agency and their respective roles in implementing each action.

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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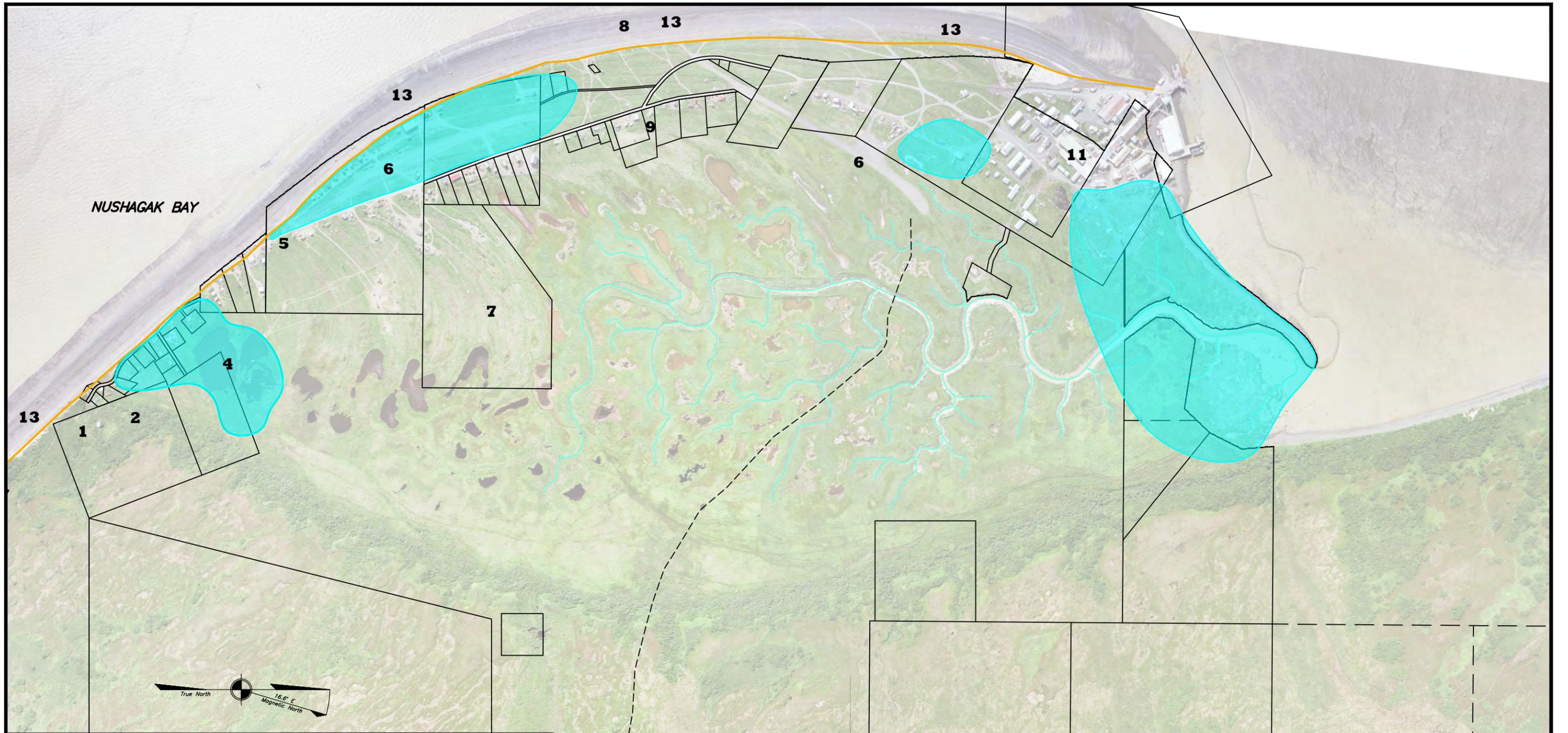
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FIGURES

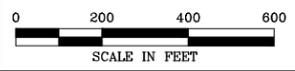


**Community Map
EKUK**

58° 48' 27" N 158° 33' 12" W (NAD 83)
 Approximate Elevation: 10'
 Township 16 South, Range 56 West, S.M., AK
 U.S.G.S. Quadrangle "NUSHAGAK BAY D-2" Alaska
 BRISTOL BAY RECORDING DISTRICT

LEGEND

- EROSION
- FLOODING
- LANDSLIDE



SHEET
1 of 2

MAP NOTES
 This map was prepared by the Bristol Bay Native Association (BBNA) in cooperation with the Alaska Department of Community and Economic Development (DCEd) using funding from the Bristol Bay Housing Authority, U.S. Bureau of Indian Affairs, Alaska Coastal Management Program and funding from the Initiative for Accelerated Infrastructure Development (IAID). The IAID is supported by grants from the Alaska Native Tribal Health Consortium, Denali Commission, USDA Rural Development, Alaska Department of Transportation and Public Facilities and DCEd. The Bristol Bay Native Association contracted with Bristol Environmental & Engineering Services in June of 2003 to prepare the map. McClintock Land Associates Inc. was subcontracted by Bristol Environmental and Engineering Corporation to perform aerial photography and control surveying.

This map is based upon a digital orthophoto prepared to National Map Accuracy Standards from July 8, 2003 photography (nominal scale 1" = 1000'). An orthophoto is an aerial photo which has been corrected, by rectification to ground control stations, to remove aircraft distortions and warpage. The distortions are generally caused by topography and the aircrafts tilt and trim.

Property and utility information has been generated from readily available sources with limited accuracy checks. Property information is not intended to represent a comprehensive title search of Records Office records. Utility locations are an approximate and show only the main lines. Generally, the information is current as of July, 2003.

This map should not be construed as a survey. On-site surveys should be conducted prior to engineering and or construction.

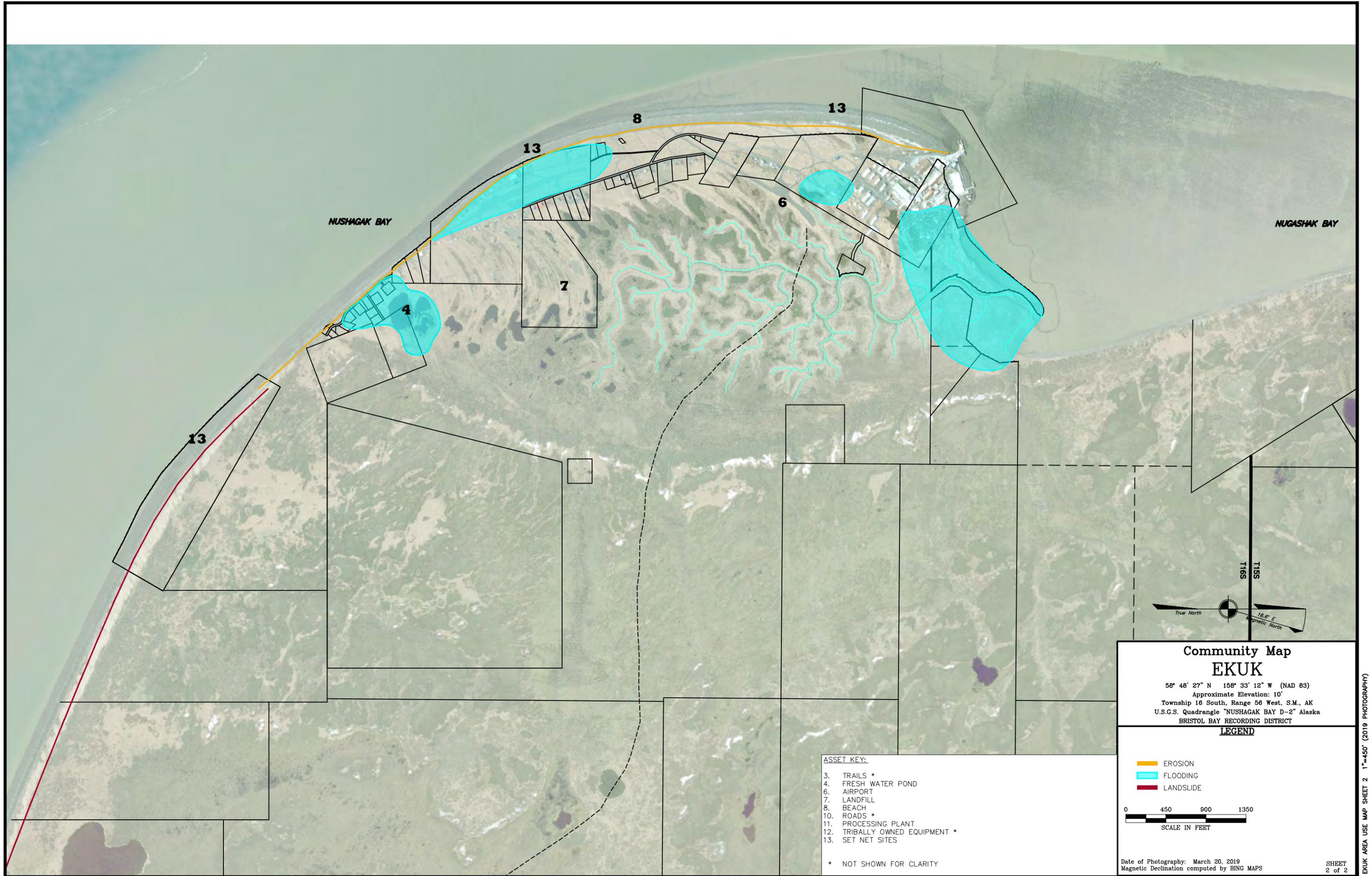
COORDINATE SYSTEMS
 Horizontal Datum—NAD 83 Alaska State Plane Zone 6 (USS FEET)
 based on TRI STATION "Dillingham Az Mk"
 Vertical Datum—NAVD 88, based on CORS tie to "Kenai" & "Cold Bay" & "Kodiak"
 Magnetic Declination computed by U.S.G.S. Geomag program using IGRF2000 model as of January, 2004.

TOPOGRAPHIC & PLANIMETRIC DATA
 All topographic and planimetric data was collected utilizing stereo photography correlated with the photography used for the orthophoto production. Topographic data was prepared to National Map Accuracy Standards for a 2 foot contour interval. Topographic data located in densely vegetated areas should be considered less accurate and may not meet those standards aforereferenced.

ASSET KEY:

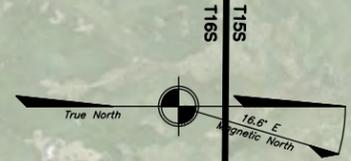
1. ST. NICHOLAS CHURCH
2. CEMETERY
3. TRAILS *
4. FRESH WATER POND
5. LIGHTHOUSE
6. AIRPORT
7. LANDFILL
8. BEACH
9. COMMUNITY WELL
10. ROADS *
11. PROCESSING PLANT
12. TRIBALLY OWNED EQUIPMENT *
13. SET NET SITES

* NOT SHOWN FOR CLARITY



NUSHAGAK BAY

NUGASHAK BAY

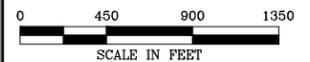


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ASSET KEY:

- 3. TRAILS *
- 4. FRESH WATER POND
- 6. AIRPORT
- 7. LANDFILL
- 8. BEACH
- 10. ROADS *
- 11. PROCESSING PLANT
- 12. TRIBALLY OWNED EQUIPMENT *
- 13. SET NET SITES

* NOT SHOWN FOR CLARITY

Date of Photography: March 20, 2019
 Magnetic Declination computed by BING MAPS

SHEET
2 of 2

EKUK AREA USE MAP SHEET 2 1"=450' (2019 PHOTOGRAPHY)

APPENDIX A

Planning Process

- Meeting Minutes (September 24, 2018)
- Planning Team Meeting Sign-In Sheet (September 24, 2018)
- Hazard Identification Worksheet
- Risk Analysis Worksheet
- Mitigation Action Types & Examples
- Potential Mitigation Actions
- Mitigation Action Evaluation Worksheet

MEETING MINUTES

Project: **BBNA THMP & TTSP Project**

Bristol Project No: 32190013

Reference: Ekuk THMP Planning Team Workshop (Hazard ID, Risk Analysis, Mitigation)

Date of Meeting: September 24, 2018 9:00 AM to 1:30 PM

Location of Meeting: Ekuk Village Council Building

Participants:

Bristol: Danielle Dance

BBNA: Annie Fritze

Ekuk Planning Team: Jennifer Robinette (Point of Contact), Diane Wetter, Gladys John, Robert Heyano (briefly), Brooklynn George

Summary

A Planning Team meeting was held to collect data for the Tribal Hazard Mitigation Plan (THMP). Hazards to profile in the THMP were identified. Data for the profiled hazards was collected, and assets were identified. Additionally, draft vulnerability statements, goals, and some mitigation strategies were identified and prioritized.

Action Items

- Planning Team continue to collect completed surveys and submit to Bristol as soon as possible.
- Planning Team – Reach out to additional stakeholders for input.
- Bristol – Additional research on FEMA Personal Flood Insurance
- Bristol – Can / should the lighthouse be classified as an asset? The lighthouse is owned and operated by the Coastguard. They come each year to do maintenance on this structure.
- Bristol – locate assets and determine estimated value

General Notes

- Diane has pictures of floods and erosion

Profiled Hazards

- Earthquake
 - Minor experiences
 - 1964 – Moved up to the hill. The earthquake was felt but did not do any damage.

- A few years ago, earthquake was felt. Some well damage was done and it was thought to be due to the earthquake the shifting of the earth.
- Erosion
 - This year is worse than ever.
 - Erosion starts around the cannery (Ekuk Fisheries) and extends down to Etolin Point.
 - Homes are damaged and caused to move back away from the eroding areas.
 - There are cameras to monitor the erosion.
 - Diane has some pictures.
- Flood
 - Water covered the whole village this Fall 2018. No land visible.
 - Diane has pictures
 - People went to cannery
 - Main damage was to the airport.
 - Balls Processing Plant used their container vans to prevent more flooding – used as berms.
 - Several cabins were affected.
 - Pilings lost in a cabin
 - Village used to flood from the creek behind the village. The creek is getting smaller so this is not the biggest flood threat these days.
 - Spring tidal floods – affected homes / airport
 - Piece of carpet on top of one of the buildings.
 - Ball field (airport) flooded for 3 days. Bowker (local pilot) had to move his planes.
 - Surf damage affected beaches
 - Used to have floods in the fall.
 - One home that has flood level marks
- Landslides
 - Village on low lands, cabins on bluff
 - Landslides affect fishing
 - Cuts off access to set net sites
 - Can't get around the bluff (corner) any more
 - Estimated 25 foot landslide
 - Every summer / throughout the summer.
- Severe Wind
 - Winds cause surf to rise
 - Airport travel would be impacted as well as boat travel
 - Longest time travel has been impacted was 3 days.
 - Causes an inability to fly for medical emergencies
 - Well house structure blew down.
 - Winds at 30 mph affects surf and fishing. It is too rough.
- Tsunami
 - 1964 – Diane recalled her family moved to higher ground after the 1964 earthquake because of the following tsunami warning. She recalls they did not have adequate “winter gear”.
 - If it happens (prediction) – we are not prepared for it. We don't have a plan to get the people to the “bluffs”. We don't have a shelter.
- Wildfire

- Lightning strikes could cause a wildfire
 - Personal properties would be affected.
- Past fires have been grass fires.
- No major fires in the community.
 - Lots of grass however and would spread quickly should this happen.
- There is potential for a big fire.
- Preparedness is important.
- Economically the biggest concern is if there was a fire it could burn the cannery, which is an important economic asset to Ekuk.

Non-Profiled Hazards

- Avalanche
 - Not experienced in the community.
- Drought
 - Has not had a drought long-term.
 - Some years are drier than others. Every year is different. Depends on rain.
 - Long-term drought can affect the cannery and other fish processing.
 - The community uses individual well water sources.
- Extreme Cold
 - Not a real issue.
 - There is one resident that resides in Ekuk year round.
- Extreme Heat
 - If Ekuk had long periods of extreme heat it could dry up their water supply.
 - Revisit this in next plan update.
- Severe Winter Weather
 - Historically people had to shovel out snow due to blizzard conditions.
 - Revisit with next plan update.
- Subsidence
 - Last year was first year that they have had problems digging down for “refrigeration” due to the thawing permafrost.
 - Revisit in next plan update.
- Volcano (Ash fall)
 - Depending on wind direction.
 - Airplanes would be impacted.
 - No memories of this being an issue
 - The community runs on generators. This would have a significant impact on the processing plant. The community members could resort to lamps and candles.

Risk Analysis

- See attached risk analysis worksheet for list of assets and how the hazards relate to them.
- Bristol will locate assets
- Bristol will determine high level estimated value
- The beach and set net sites are perpendicular to each other. Decide how to best handle these. Should they be their own line item or the same. A determination on the number of occupants needs to be made so a duplication does not occur.

Vulnerability Statements

- The trail that leads up the bluff, past the church, is the only evacuation route and is damaged and difficult to travel due to erosion, flooding, and landslides.
- Landslides reduce accessibility and productivity to the beach and set net sites.
- Earthquakes can impact the community well by breaking the well casing.
- The only access from the cannery to Clarks Point via ATV is during low tide and is inaccessible due to flooding.
- If there was a large - scale tsunami the community would be wiped out.
- Air and marine transportation in and out of Ekuk is impacted by severe wind.

Mitigation Goals

- The following mitigation goals were identified
 - Reduce the possibility of damages due to earthquakes.
 - Reduce the possibility of damages due to erosion.
 - 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 tsunamis.
 - Reduce the possibility of damages due to wildfires.
 - Build capacity of the Tribe to prepare for, respond to, and recover from disaster.
 - Promote recognition and mitigation of all natural hazards that affect the Community.
 - Promote cross-referencing of mitigation goals and actions with other tribal planning mechanisms and projects.
 - Prevent damage to structures and infrastructures.
 - Promote development that is disaster – resistant.

Mitigation Strategies

- Stabilization of the well house and well
- No digging between 18 ft and 24 ft tides (regulation)
- Erosion control (natural protections)
- Culverts (structural)
- Educating community members on digging practices (education)
- Extend dock instead of digging out (structural)
- Safe house on higher grounds away from flooding and erosion (structural)
- Evacuation plan / route / get an agreement in place with the cannery so people can go there in case of flooding.
- Flood modeling (in progress)
- Secure public structures
- Educate community members about landslides.
- Place signage along bluff near landslide prone areas (Beware of Landslides). Place a poster at cannery.
- Prepare residents with air masks for smoke.
- Partner with forestry and other agencies for fire mitigation strategies and education.
- Participate in the National Flood Insurance Program.
- Produce education materials about the hazards in the community.
- Assemble emergency boxes.

Draft Prioritized Mitigation Strategies

- Community Emergency Plan
- Evacuation Plan / Route
- Safe House
- Flood Mitigation
 - Modeling
 - Increasing / installing drainage system
- Erosion Mitigation
 - Erosion control / bank stabilization
- Educate on emergency preparedness
- Emergency Boxes / Supplies

- End Minutes -

Attachments:

Sign – In Sheet

Hazard Identification Worksheet

Risk Analysis

Cc: File

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.

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

* 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	<ul style="list-style-type: none"> Only one small area or none Less than 10% of planning area Isolated single-point occurrences
GREEN	Limited	<ul style="list-style-type: none"> Only some of the community 10% to 25% of planning area Limited single-point occurrences
YELLOW	Significant	<ul style="list-style-type: none"> Most of the community 25% to 75% of planning area Frequent single-point occurrences
RED	Extensive	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Little to no damage done Slow speed of onset or short duration of event Limited classification on scientific scale (if applicable)
GREEN	Moderate	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Less than 1% probability of occurrence in the next year Recurrence interval of greater than every 100 years
GREEN	Occasional	<ul style="list-style-type: none"> 1% to 10% probability of occurrence in the next year Recurrence interval of 11 to 100 years
YELLOW	Likely	<ul style="list-style-type: none"> 10% to 90% probability of occurrence in the next year Recurrence interval of 1 to 10 years
RED	Highly Likely	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.

Risk Analysis Worksheet (Profiled Hazards Only)

Column A Facility Name	Column B Number of Occupants	Column C Location	Column D Estimated Value	Column E: Hazard Impacts (Fill in Hazards in Blank Columns Below)											
				Earthquake	Erosion	Flood	Landslide	Severe Wind	Tsunami	Volcano	Wildfire				
Processing Plant (Ekuk Fisheries) - Seasonal	250			x	x	x		x	x	x	x				
Processing Plant (Gerry Ball) - Seasonal (Revisit)	25			x	x	x		x	x	x					
Airport	n/a			x	x	x		x	x	x					
Community Well	1			x		x		x	x	x	x				
Beach (Along Bluff)	250				x		x	x	x						
Landfill	1					x			x		x				
Lighthouse	n/a			x	x	x		x	x						
Burn Box, Tractor, ATV, Trailer, Generator(s), Glass Breaker, Ice Machine, Smart Ash Burner	n/a			x	x	x		x	x	x	x				
Trail (Up to Church/Bluff)	n/a				x	x	x		x		x				
Cemetery	n/a				x		x		x		x				
St. Nicolas Church Site (ceremonial service)	15				x		x		x						
Roads	n/a				x	x	x	x	x						
Set Net Sites	250				x		x	x	x						

MITIGATION ACTION TYPES AND EXAMPLES

Mitigation Type	Description	Examples
Local Plans and Regulations	<p>These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built</p>	<ul style="list-style-type: none"> • 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	<p>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.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of action are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.</p>	<ul style="list-style-type: none"> • 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	<p>These are actions that minimize damage and losses and also reserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	<p>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.</p>	<ul style="list-style-type: none"> • 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	<p>These are actions to identify emergency response or operational preparedness.</p>	<ul style="list-style-type: none"> • 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.	<u>1.A</u>	Develop a community emergency plan
		<u>1.B</u>	Identify an evacuation route for the Community and develop an evacuation plan.
		<u>1.C</u>	Acquire supplies for and assemble emergency boxes
2	Promote recognition and mitigation of all natural hazards that affect the Community.	<u>2.A</u>	Educate the Community about personal emergency preparedness.
		2.B	Produce education material for each of the profiled hazards.
		<u>3.A</u>	Identify location for all planning documents that is easily accessible.
3	Promote cross-references of mitigation goals and actions with other tribal planning mechanisms and projects.	<u>3.B</u>	Maintain a current location for all electronic versions of the planning documents.
		<u>3.C</u>	Conduct a yearly review of the plans and document progress towards their goals and actions.
		<u>3.D</u>	Include goals and strategies in future planning document updates.
		4.A	Stabilize the well house and well.
4	Reduce the possibility of damages due to earthquakes.	<u>4.B</u>	Educate the Community about earthquake preparedness.
		<u>5.A</u>	Identify an appropriate erosion control and / or bank stabilization method.
		5.B	Develop a regulation that prohibits digging between 18 and 24 foot tides.
		5.C	Extend the dock instead of digging out.
5	Reduce the possibility of damages due to erosion.	5.D	Educate community members about proper digging practices.
		<u>6.A</u>	Finish flood modeling for the Community.
		<u>6.B</u>	Design and install proper drainage features for the Community.
		6.C	Develop and agreement with the cannery so residents have a safe place to go during a flood.
		6.D	Research and participate in the National Flood Insurance Program (NFIP).
6	Reduce the possibility of damages due to floods.	7.A	Educate community members about landslides.
		7.B	Place signage along Ekuk Bluff near landslide prone areas and place a poster about the dangers of landslides on the bluff in the cannery.
		<u>7.C</u>	Provide educational materials to those fishing in effected areas, or potential effected areas prone to landslides.
7	Reduce the possibility of damages due to landslides.	8.A	Secure public structures in the Community.
		<u>8.B</u>	Encourage community members to have a backup power source.
		<u>8.C</u>	Develop a Community cleanup effort for loose debris.
8	Reduce the possibility of damages due to severe winds.	<u>9.A</u>	Identify location for an emergency building for the Community.
		<u>9.B</u>	Educate residents about the dangers of tsunamis.
9	Reduce the possibility of damages due to tsunamis.	<u>10.A</u>	Obtain a mobile water supply.
		<u>10.B</u>	Provide brush and grass removal around the Community.
		<u>10.C</u>	Identify and train fire fighters.
		<u>10.D</u>	Educate community residents about good brush removal and fire barriers around homes.
		10.E	Prepare resident with air masks for smoke.
		10.F	Partner with the forestry and other agencies for additional fire mitigation strategies and education.
10	Reduce the possibility of damages due to wildfires.		

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	1	1	0	1	1	1	1	8
1.B	1	0	1	1	1	0	1	1	1	1	8
1.C	1	0	1	1	1	0	1	1	1	1	8
2.A	1	1	1	1	1	1	1	1	1	1	10
3.A	1	0	1	1	1	0	1	1	1	1	8
3.B	1	0	1	1	1	0	1	1	1	1	8
3.C	1	1	1	1	1	1	1	1	1	1	10
3.D	1	1	1	1	1	1	1	1	1	1	10
4.B	1	1	1	1	1	0	1	1	1	1	9
5.A	1	1	1	1	1	1	1	-1	1	1	9
6.A	1	1	1	1	1	1	1	1	1	1	10
6.B	1	1	1	1	1	1	1	1	1	1	10
7.C	1	1	1	1	1	1	1	1	1	1	10
8.B	1	0	1	1	1	0	1	1	1	1	8
8.C	1	1	1	1	1	1	1	1	1	1	10
9.A	1	0	1	1	1	0	1	1	1	1	8
9.B	1	1	1	1	1	0	1	1	1	1	9
10.A	1	1	1	1	1	1	1	1	1	1	10
10.B	1	1	1	1	1	1	1	-1	1	0	8
10.C	1	1	1	1	1	1	1	-1	1	1	9
10.D	1	1	1	1	1	1	1	1	1	1	10

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

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APPENDIX B

Public Involvement

- Public Meeting Comments (September 24, 2018)
- 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

MEETING MINUTES

Project: **BBNA THMP & TTSP Project**

Bristol Project No: 32190013

Reference: Ekuk THMP Community Meeting

Date of Meeting, September 24, 2018 6:30 PM to 7:45 PM

Location of Meeting: Ekuk Village Council Building

Participants:

Bristol: Danielle Dance (Presenter)

BBNA: Annie Fritze

Ekuk Community Members: See Attached Sign-In Sheet

Summary

A community meeting was held to inform the public about the Tribal Hazard Mitigation Plan (THMP), collect community feedback about the identified hazards and mitigation actions / projects. This meeting was also held to collect personal experiences with the identified hazards, and identify problem areas in the community in regards to natural hazards. Additional assets and hazard prone areas were identified on the community maps available. The community members were asked for additional mitigation strategy ideas, and ideas on how to continue public participation throughout the plan development and through the implementation of the mitigation actions.

Action Items

- Planning Team – Reach out to additional stakeholders for comments.
- Bristol – Look into National Flood Insurance. The community must participate for home owners to apply under them. Can “community” be changed to “Tribe”?

General Comments

- Need a good gravel source (problem statement)
 - Own the airport property and could use the gravel from that (strategy)

Hazards

- Severe Winter Weather
 - This hazard was not chosen to be profiled by the Planning Team but was discussed again to get the community members input.
 - Not Profiled
 - Bad winter storms happened many years ago in the early ‘60s and ‘70s
 - If the community experienced a blizzard they would be snowed in.
 - This did not have a huge impact as the community had the use of dog sled teams.
 - They would carry water from the cannery and used ropes to haul the water.
 - One community member remembers the cannery roof caving in on winter

- Volcano
 - This hazard was not chosen to be profiled by the Planning Team but was discussed again to get the community input.
 - Not Profiled
 - No one could remember ever seeing any ashfall from a volcanic eruption.
- Wildfire
 - There was a fire wildfire between Ekuk and Ugashik. It created very smoky conditions.
- Flood
 - Used to flood at least 2 times a year.
 - Now seems to happen every fall.
- Earthquake
 - 1964 – community members recall that they moved up the hill due to the tsunami warnings that the earthquake caused. They do not recall any damage that was done to the buildings.
- Landslides
 - These happen along the bluff.
 - They are dangerous because you never know when they happen.

Assets

- The community members identified the following to be added to the assets.
 - Natural Environment - Ponds behind the community.
 - These ponds are fresh water ponds and are used for subsistence purposes.
 - These were identified on the community map.
 - There is a concern that if the erosion continues and the flooding continues like it has been lately that these ponds will get salt water in them and the community will lose these as fresh water ponds.
 - Add proposed road from Ekuk to Clarks Point (Landfill Road)
 - Some community members would be happy to get a small portion of the road built. This would serve as their new evacuation route to get people off the beach to higher ground in the event of a flood or high tide.
- Some concern was expressed about the Processing Plant (Gerry Ball)
 - Gravel is being removed from the beach to protect the processing plant. The concern is that this aids in the major erosion problems already prevalent in the community.

Goals

- Goals were fine. Volcano needs to be removed. This was an error in the presentation.

Mitigation Actions

- Build safety kits
- Fire
 - Mow the grass down. Grass is the main concern with fire. There is a lot of grass around the community and it gets dry.
 - Obtain a mobile water supply
 - Tried to get a tank for an ATV trailer through Firewise. Not successful.
 - Designate / train fire fighters

- Brush removal
 - Educate community residents about good brush removal around homes and how to maintain a fire barrier.

Continued Community Involvement

- How to keep community involved during plan development:
 - Send draft to Jennifer and she will contact and get the word out to community members when a draft is ready for review.
- How to keep community informed and involved in mitigation action plan implementation:
 - Community meetings
 - Newsletters
 - Phone calls
 -

- End Minutes –

Attachments:

Sign – In Sheet
Handout
Presentation

Cc: File



EKUK FEMA Tribal Hazard Mitigation PLAN

COMMUNITY MEETING

Come learn about the Village of Ekuik's FEMA Tribal Hazard Mitigation Plan. The Plan identifies the natural hazards that impact your community. It also discusses ways to mitigate future impacts from these natural hazards.

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.

Monday
September 24,
2018
6 PM

372 Aleknagik
Lake Road

Refreshments

Door Prizes

Provide input
about natural
hazards in
Ekuk!

For more information:

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

Bristol



ENGINEERING
SERVICES COMPANY, LLC

Community Meeting for Ekuik Tribal Hazard Mitigation Plan September 24, 2018

Dear Participant;

Thank you for attending the public meeting for the Ekuik 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.

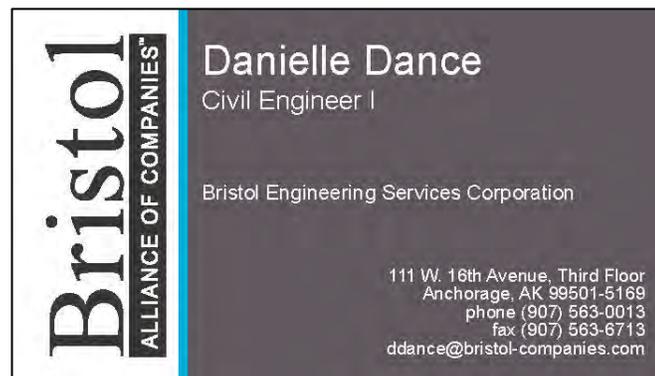
Sincerely,



Danielle Dance
Civil Engineer I

Attachments:

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





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 THMP 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	Involvement
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:

<p>Bristol Bay Native Association DOTID</p> <p>Annie Fritze OR Dan Breeden PO Box 310 Dillingham, Alaska 99576 (907) 842-6219</p>	<p>Bristol Engineering Services Company, LLC</p> <p>Danielle Dance, Consultant 111 W. 16th Avenue, Third Floor Anchorage, Alaska 99501 (907)563-0013</p>
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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/aprhc>
- Rainfall: <http://www.weather.gov/aprhc>
- Breakup Info: <http://www.weather.gov/aprhc/breakupESRIMap>
- River Conditions: <http://www.weather.gov/aprhc/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>



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!



@Readygov
[Twitter.com/readygov](https://twitter.com/readygov)



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[Fema.gov/mobile-app](https://fema.gov/mobile-app)



Ready.gov/prepare



FEMA

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Catalog No. 1872-3

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@Readygov
[Twitter.com/readygov](https://twitter.com/readygov)



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[Facebook.com/readygov](https://facebook.com/readygov)



[Fema.gov/mobile-app](https://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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Get Involved in
Your Community



Document and
Insure Property

Bristol Native Village of Ekuk
Public Meeting
September 24, 2018

Ekuk FEMA Tribal Hazard Mitigation Plan

Bristol Engineering Services Company, LLC
Danielle Dance

Bristol Native Village of Ekuk
Public Meeting
September 24, 2018

Safety Minute



Code Zero means zero incidents, zero injuries, and zero losses.
Code Zero positively influences how we think and act.
Stop Work is the Bristol way.

Bristol Native Village of Ekuk
Public Meeting
September 24, 2018

Presentation Overview

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



Bristol Native Village of Ekuk
Public Meeting
September 24, 2018

Project Background

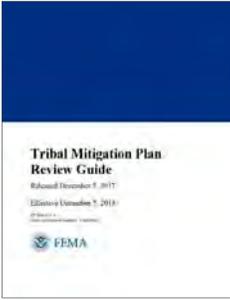
- ▶ BBNA DOTID awarded Pre-Disaster Mitigation Program grant from FEMA
 - Develop the Tribal Hazard Mitigation Plan
 - Contracted BESC
- ▶ Hazard Mitigation
 - eliminates risk to or reduces hazard impact severity to community assets
 - Projects can be long or short term
- ▶ Purpose of Plan
 - Identify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




Bristol Native Village of Ekok Public Meeting September 24, 2018

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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Bristol Native Village of Ekok Public Meeting September 24, 2018

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



U.S. Army Corps of Engineers Alaska District
Alaska Baseline Erosion Assessment
Erosion Information Paper - Ekok, Alaska
February 23, 2009

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Bristol Native Village of Ekok Public Meeting September 24, 2018

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
 - Earthquake
 - Erosion
 - Flood
 - Landslide
 - Severe Wind
 - Tsunami
 - Wildfire
- ▶ What experiences have you had?

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Bristol Native Village of Ekok Public Meeting September 24, 2018

Community Assets

- ▶ Asset
 - People
 - Economy
 - Built Environment
 - Natural Environment
- ▶ Major Community Assets
 - Processing Plant (Ekuk Fisheries)
 - Processing Plant (Gerry Ball)
 - Airport
 - Community Well
 - Beach
 - Landfill
 - Lighthouse
 - Tribal Equipment
 - Trail from beach to bluff
 - Cemetery
 - St. Nicolas Church Site
 - Roads
 - Set Net Sites



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Bristol
BRISTOL TOWN GOVERNMENT

Native Village of Ekok
 Public Meeting
 September 24, 2018

Mitigation Goals

- ▶ Goals Based on Vulnerability Statements
 - The trail that leads up the bluff, past the church, is the only evacuation route and is damaged and difficult to travel due to erosion, flooding, and landslides.
 - Landslides reduce accessibility and productivity to the beach and set net sites.

FEMA Local Mitigation Planning Handbook
 March 2013

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Bristol
BRISTOL TOWN GOVERNMENT

Native Village of Ekok
 Public Meeting
 September 24, 2018

Mitigation Goals

- ▶ Community Goals
 - Reduce possibility of damages due to:
 - Earthquakes
 - Erosion
 - Floods
 - Landslides
 - Severe Wind
 - Tsunami
 - Wildfire
 - Build capacity to prepare, respond to, and recover from disasters.
 - Promote recognition and mitigation of all natural hazards that affect the Community.
 - Promote cross-referencing of mitigation goals and actions with other planning efforts.
 - Prevent damage to structures and infrastructure.
 - Promote development that is disaster-resistant.

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Bristol
BRISTOL TOWN GOVERNMENT

Native Village of Ekok
 Public Meeting
 September 24, 2018

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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Bristol
BRISTOL TOWN GOVERNMENT

Native Village of Ekok
 Public Meeting
 September 24, 2018

Mitigation Actions (Continued)

- ▶ Mitigation Actions
 - Community Emergency Plan
 - Evacuation plan / route
 - Safe house
 - Flood Mitigation
 - Modeling
 - Increasing / installing storm drainage system
 - Erosion mitigation
 - Erosion control / bank stabilization
 - Educate on emergency preparedness
 - Emergency Boxes / Supplies
- ▶ What other suggestions do you have?

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Bristol ENGINEERING

Native Village of Ekok
Public Meeting
September 24, 2018

Continued Public Involvement

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



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

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Bristol ENGINEERING

Native Village of Ekok
Public Meeting
September 24, 2018

Questions or Comments

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Bristol ENGINEERING

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September 24, 2018

QUYANA!



15

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)

- | | |
|--|--|
| <input type="checkbox"/> Coastal Ice
<input type="checkbox"/> Drought
<input type="checkbox"/> Earthquake
<input type="checkbox"/> Erosion
<input type="checkbox"/> Extreme Temperatures
<input type="checkbox"/> Flood | <input type="checkbox"/> Landslide/Avalanche
<input type="checkbox"/> Severe Winter Weather
<input type="checkbox"/> Tsunami
<input type="checkbox"/> Volcano Eruption
<input type="checkbox"/> Wildfire
<input type="checkbox"/> Other (specify):
<hr style="width: 200px; margin-left: 0;"/> |
|--|--|

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	<input type="checkbox"/>				
Drought	<input type="checkbox"/>				
Earthquake	<input type="checkbox"/>				
Erosion	<input type="checkbox"/>				
Extreme Temperatures	<input type="checkbox"/>				
Flood	<input type="checkbox"/>				
Landslide/Avalanche	<input type="checkbox"/>				
Severe Winter Weather	<input type="checkbox"/>				
Tsunami	<input type="checkbox"/>				
Volcano Eruption	<input type="checkbox"/>				
Wildfire	<input type="checkbox"/>				
Other _____	<input type="checkbox"/>				

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)

- | | |
|---|--|
| <input type="checkbox"/> News Media | <input type="checkbox"/> Tribe |
| <input type="checkbox"/> Government Agency | <input type="checkbox"/> Neighbor / Friend / Family Member |
| <input type="checkbox"/> Utility Company | <input type="checkbox"/> Non-Profit Organization |
| <input type="checkbox"/> University or Research Institution | <input type="checkbox"/> Not Sure |
| | <input type="checkbox"/> 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)

- | | |
|--|--|
| <input type="checkbox"/> Newspapers | <input type="checkbox"/> Books |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Mail |
| <input type="checkbox"/> Schools | <input type="checkbox"/> Fact Sheet / Brochure / Newsletters |
| <input type="checkbox"/> Internet (News Outlets/Email Newsletters) | <input type="checkbox"/> Public Workshops / Meetings |
| | <input type="checkbox"/> 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	<input type="checkbox"/>				
Clinic	<input type="checkbox"/>				
Churches	<input type="checkbox"/>				
City Buildings	<input type="checkbox"/>				
Tribal Buildings	<input type="checkbox"/>				
Store	<input type="checkbox"/>				
Post Office	<input type="checkbox"/>				
Transportation Systems	<input type="checkbox"/>				
Major Employers	<input type="checkbox"/>				
Fuel Storage	<input type="checkbox"/>				
Utilities	<input type="checkbox"/>				
Homes	<input type="checkbox"/>				
Subsistence Areas	<input type="checkbox"/>				
Other _____	<input type="checkbox"/>				
Other: _____	<input type="checkbox"/>				
Other: _____	<input type="checkbox"/>				
Other: _____	<input type="checkbox"/>				

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	<input type="checkbox"/>					
I support a non-regulatory approach to reducing risk	<input type="checkbox"/>					
I support a mix of both regulatory and non-regulatory approaches to reducing risk	<input type="checkbox"/>					
I support structure and infrastructure projects to reduce risk	<input type="checkbox"/>					
I support natural systems protection projects to reduce risk	<input type="checkbox"/>					
I support education and awareness programs to reduce risk	<input type="checkbox"/>					
I support protecting historical and cultural structures	<input type="checkbox"/>					
I would be willing to make my home more disaster-resistant	<input type="checkbox"/>					
I support steps to safeguard the local economy following a natural disaster	<input type="checkbox"/>					
I support improving the disaster preparedness of local schools	<input type="checkbox"/>					

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	<input type="checkbox"/>				
Protecting critical facilities (e.g. roads, bridges, clinic, schools, store, etc.)	<input type="checkbox"/>				
Enhancing function of natural features (e.g. streams, wetlands)	<input type="checkbox"/>				
Protecting historical and cultural resources and landmarks	<input type="checkbox"/>				
Protecting and reducing damage to utilities	<input type="checkbox"/>				
Strengthening emergency services	<input type="checkbox"/>				

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talked with members in your household about what to do in case of an emergency or natural disaster?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developed a “Household/Family Emergency Plan” in order to decide what everyone would do in the event of an emergency or disaster?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared a “Disaster Supply Kit” (stored extra food, water, batteries, or other emergency supplies)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SUMMARY - COMMUNITY SURVEY

A survey was distributed to the community members of Ekuk, 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

Four questionnaires were completed and returned. Question 12 asked about the gender of the respondents. One was male, one female, and two declined to answer (See Figure 1). Question 13 asked about the length of time in the community. Of the two answers we received, one lived in the community for under six months and the other for over 20 years (Figure 2).

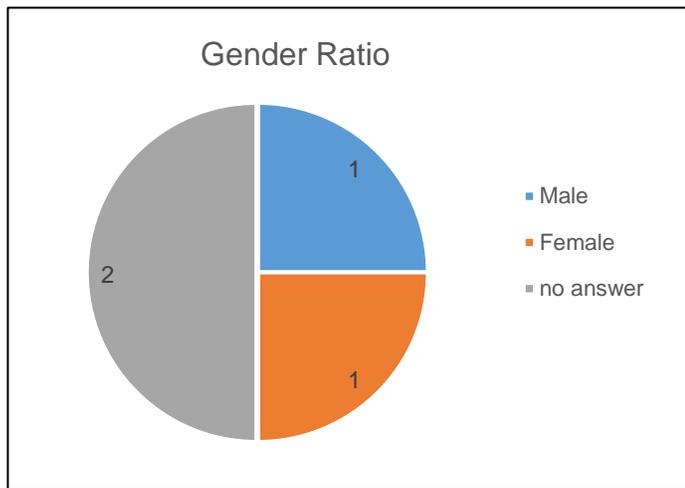


Figure 1: Gender Ratio (Question #12)

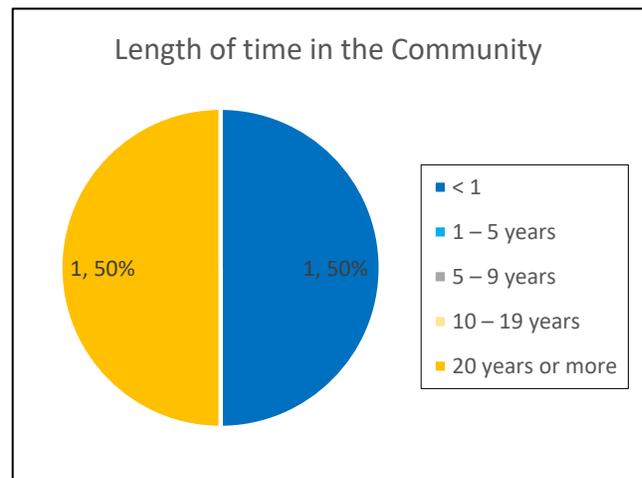


Figure 2: Length of Time in the Community (Question #13)

Three residents answered Question 11 which asked the age range of the respondent (Figure 3).

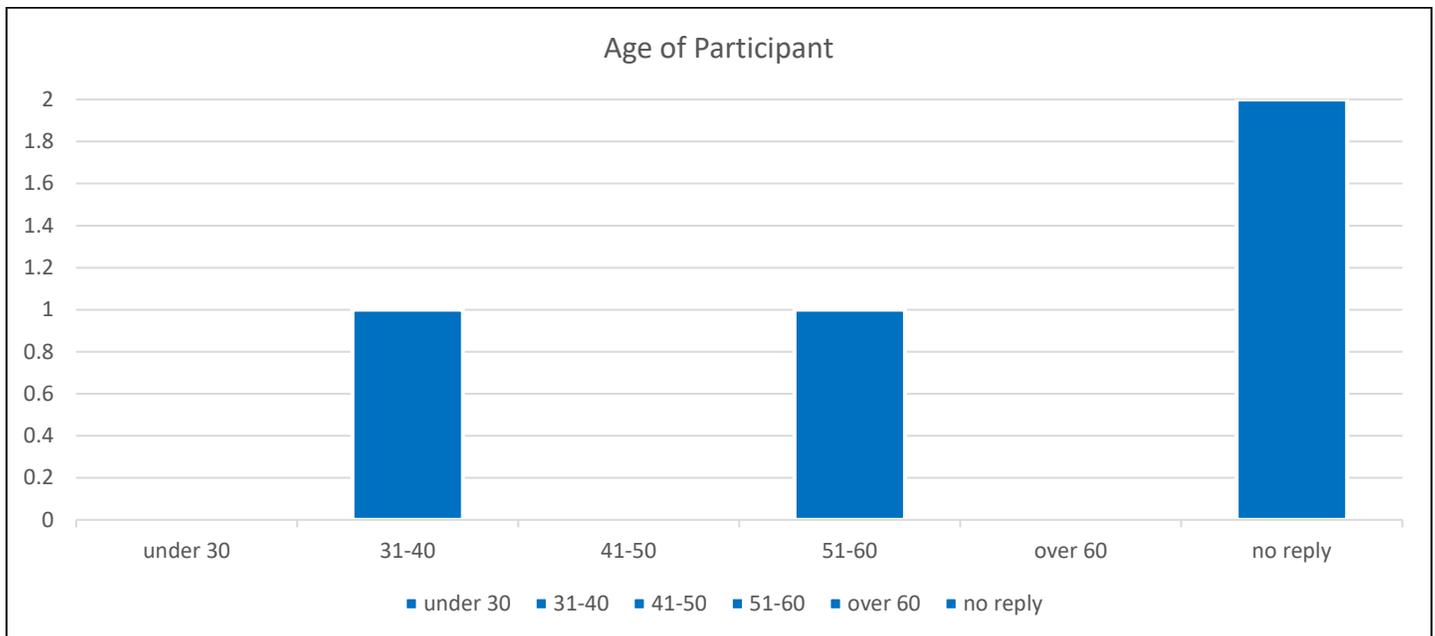


Figure 3: Age of Participant (Question #11)

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 (Figure 4).

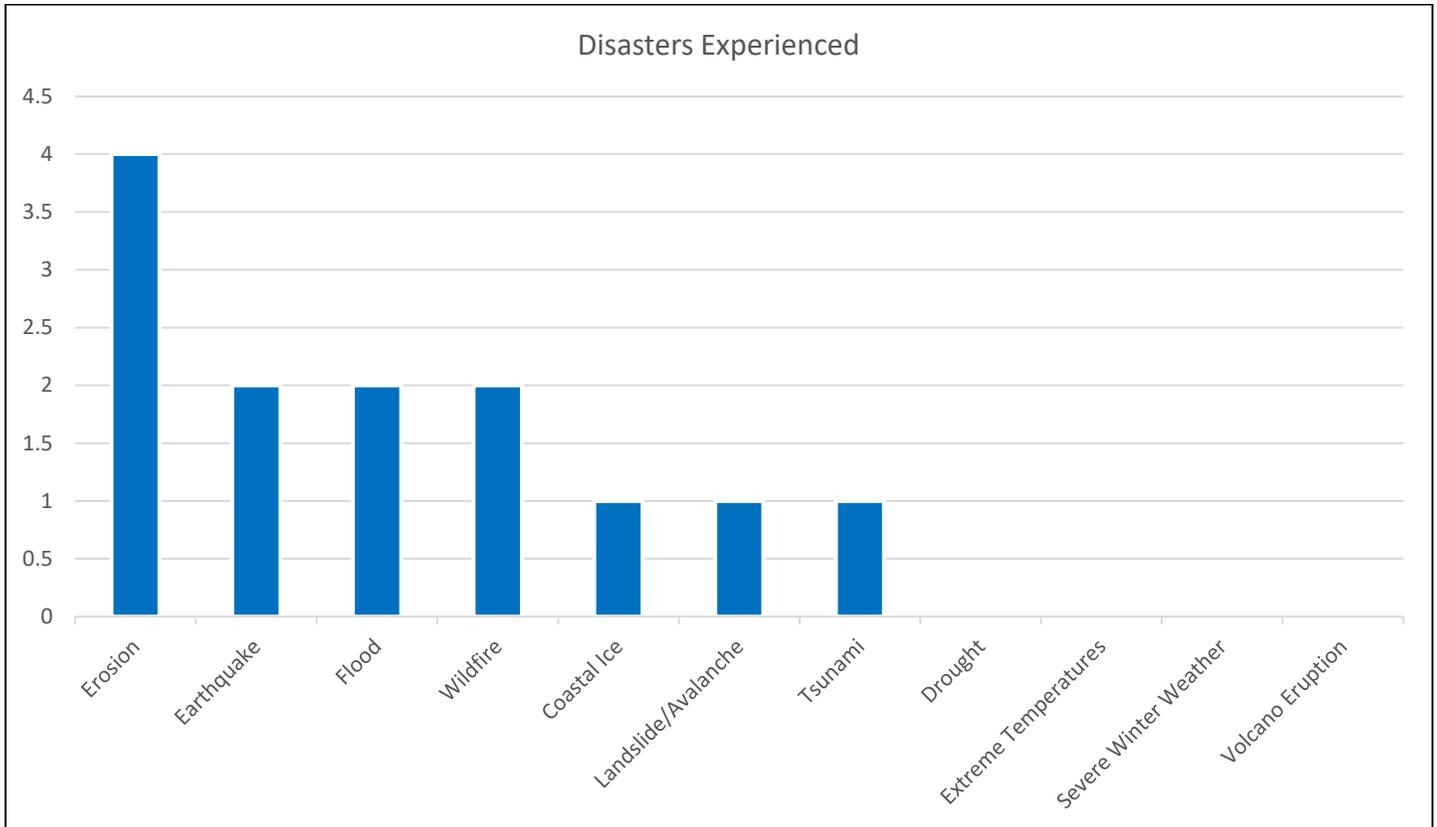


Figure 4: Disasters Experienced (Question #1)

Question #2 identified specific hazards that concerned the community members. The Community is most concerned about Erosion. All four respondents individuals out of the nine replies expressed they were very concerned about Erosion. Other disasters of concern are Floods and Tsunamis. Figure 5 identifies the concerns of the Community.

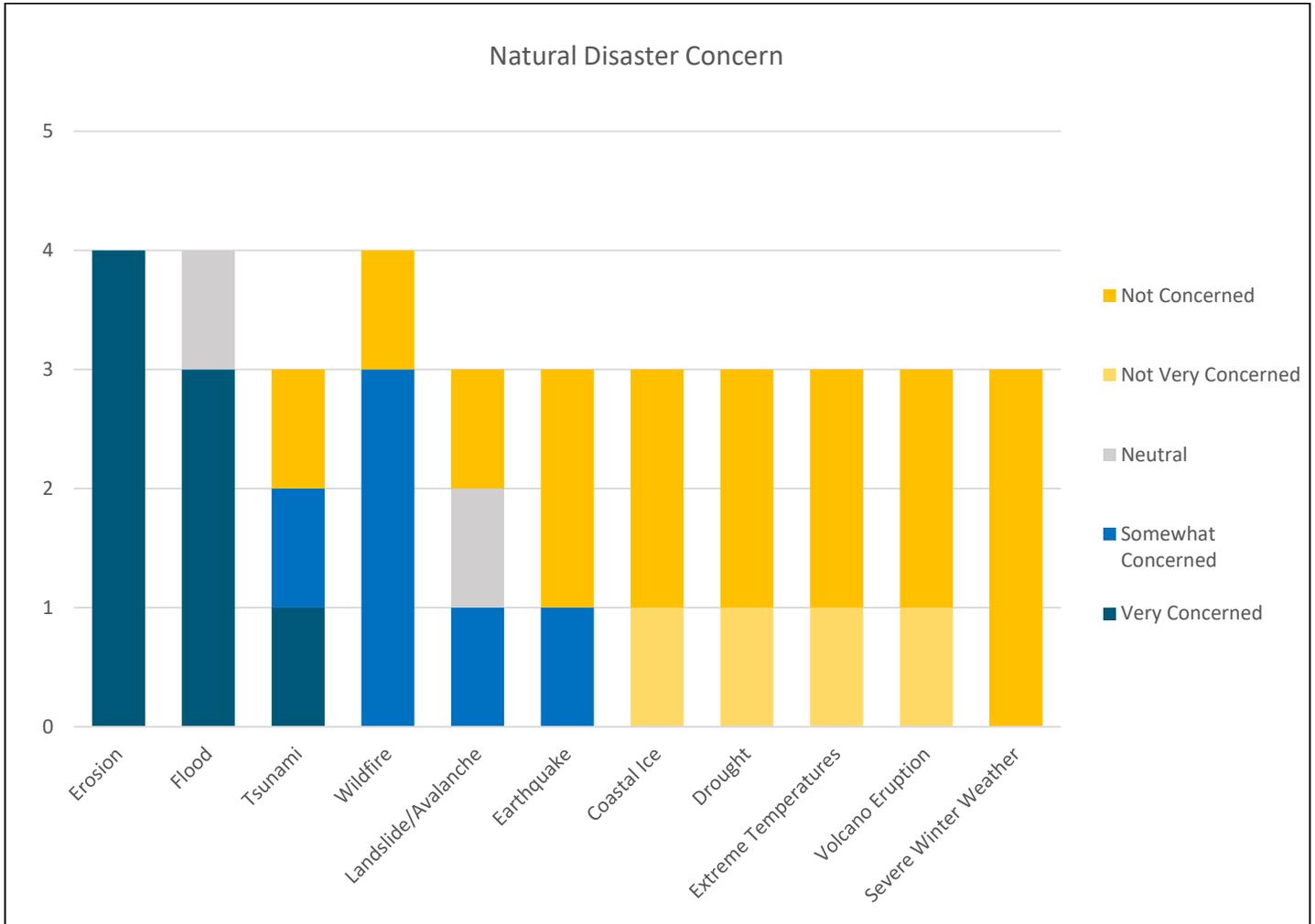


Figure 5: Natural Disaster Concern (Question #2)

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, where that information came from and how long ago (Questions 3 & 4). One respondent noted that they received information, it was 1 to 2 years ago, and the information came from the Tribe and a Friend / Family Member.

The residents were asked about the most effective way for them to receive information to protect their household and homes (Question 5). Internet was considered the 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.

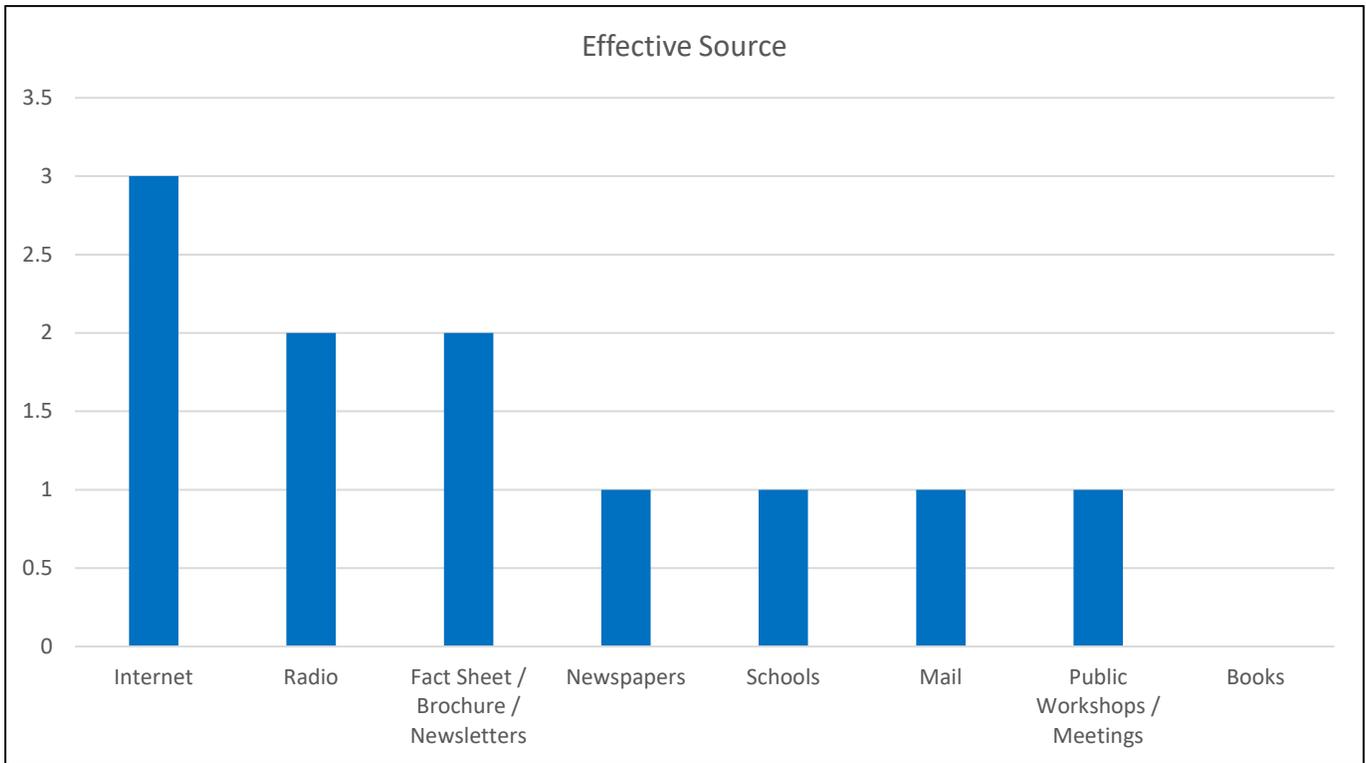


Figure 6: Effective Source (Question #5)

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.

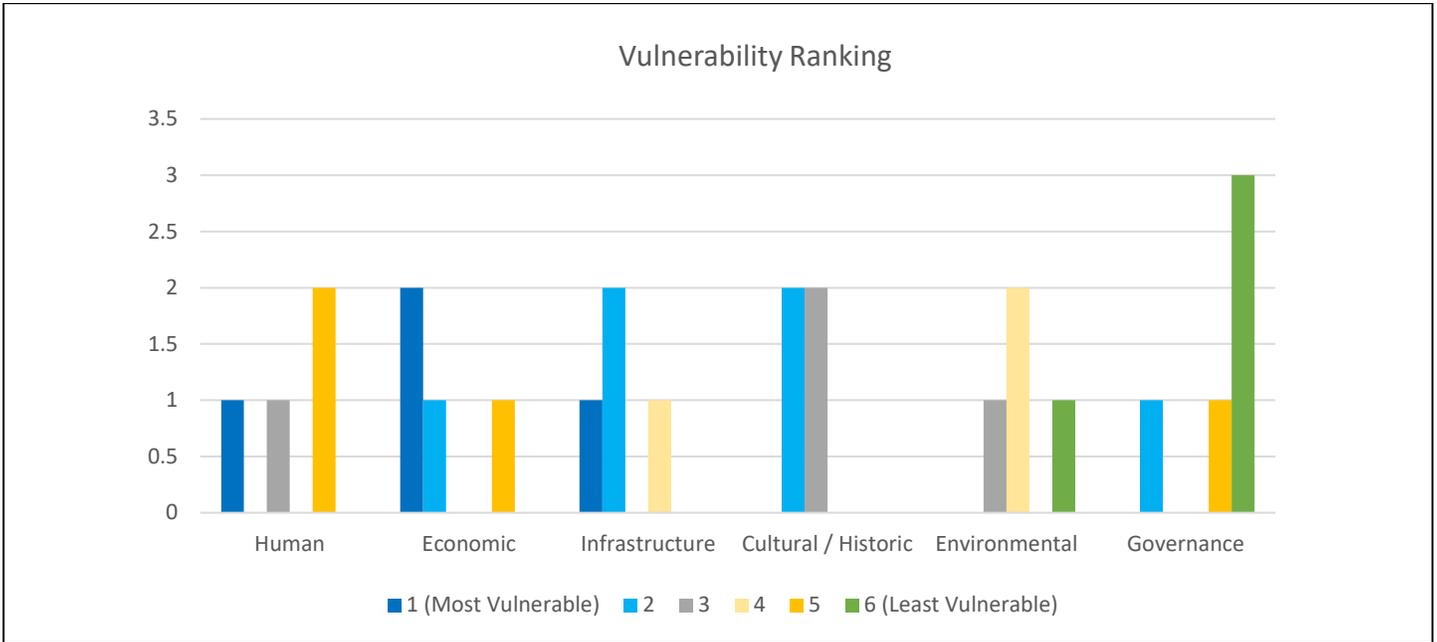


Figure 7: Vulnerability Ranking (Question #6)

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

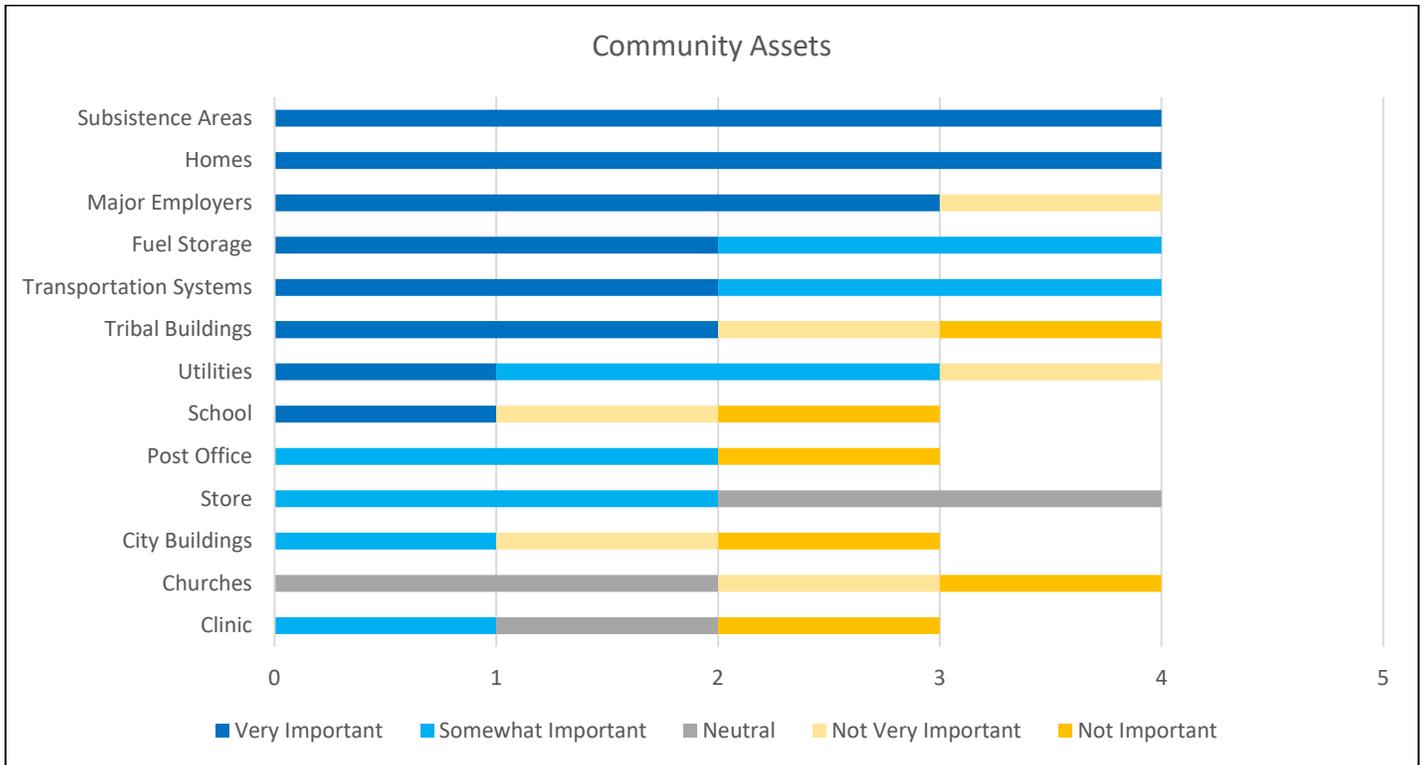


Figure 8: Community Assets (Question #7)

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



Figure 9: Mitigation Strategies (Question #8)

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

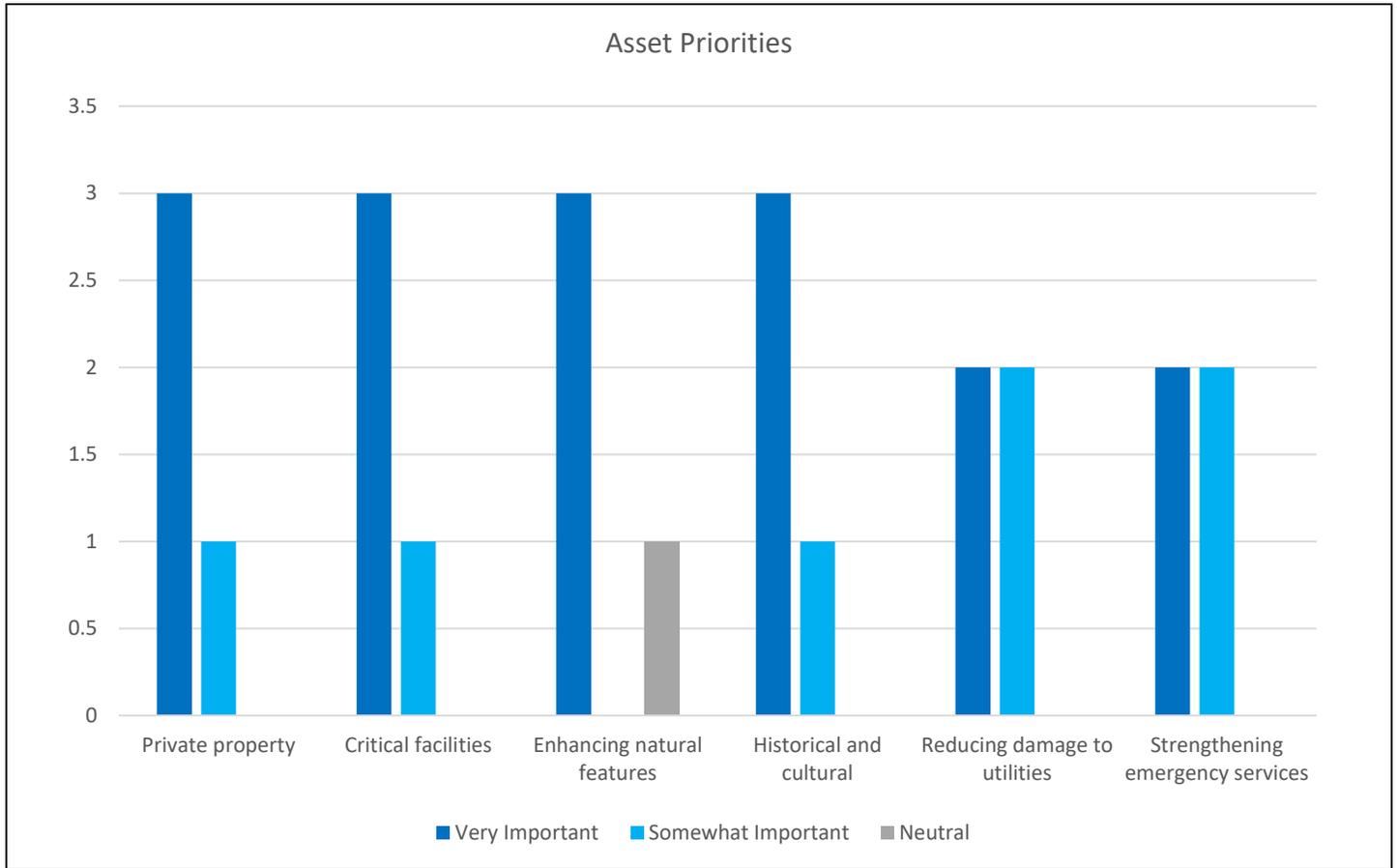


Figure 10: Asset Priorities (Question #9)

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)

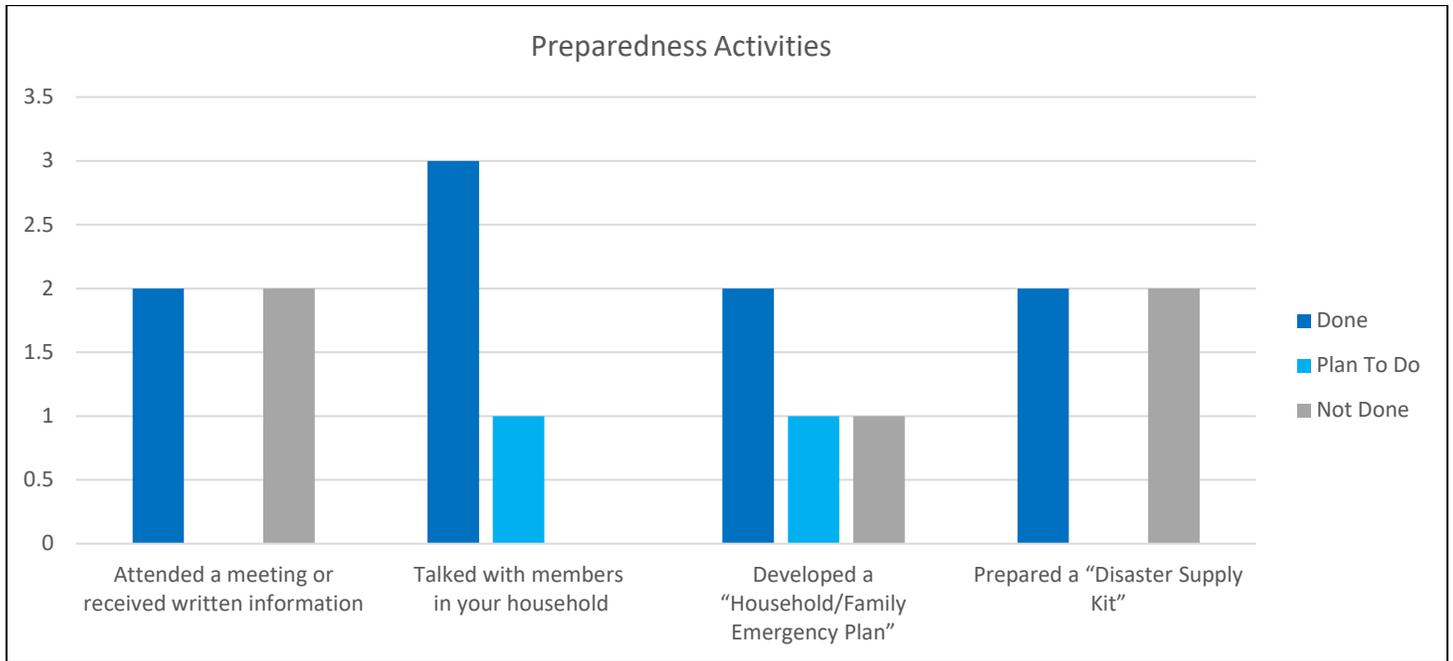


Figure 11: Preparedness Activities (Question #10)

GENERAL COMMENTS

The following is a comment made by one of the respondents.

- I don't live or fish in Ekuk. But I visit from time to time - and care about continuing to help put together Hazard mitigation.



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 THMP 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	Involvement
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

*** TX REPORT ***

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Chignik Lagoon Village
chignik lake vc
Aleknagik Trad. Council
Chignik Bay Tribal Council

-sent
-need to resend



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 -

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af

8/20/2018
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DATE: August 20, 2018

TO: Vlg Admin

FAX: _____

SENDER: Annie Fritze

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

Quyenana

Dance, Danielle

From: Annie Fritze <afritze@bbna.com>
Sent: Tuesday, February 19, 2019 10:21 AM
To: Senator.Lyman.Hoffman@akleg.gov; Representative.Bryce.Edgmon@akleg.gov; cameron@choggiung.com; jmetrokin@bbnc.net; Gayla Hoseth; Kristina Andrew; norm@bbedc.com; Program Managers
Cc: Dance, Danielle; Dan Breeden; Pearson, Isaac; Chelsey Decker
Subject: Ekuk's THMP Public Comment
Attachments: Bristol Bay Native Association FEMA Newsletter2 Final.docx

Ekuk 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 Ekuk will be made available to the Tribal offices for public review and comment February 13-25, 2019. This plan is available on BBNA's web page for public comment at <https://www.bbna.com/wp-content/uploads/Ekuk-DRAFT-FEMA-THMP-11Feb-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 **February 25, 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
Guyana.

Annie Fritze

Transportation and Infrastructure Program Manager

afritze@bbna.com

907-842-6143



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 Ekuk is available at the Tribal office for public review and comment, February 13-25, 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.

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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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PHONE (907) 842-5257

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

A handwritten signature in black ink, appearing to read "Ralph Andersen", with a stylized flourish at the end.

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

P.O. BOX 310
DILLINGHAM, ALASKA 99576
PHONE (907) 842-5257

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 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.

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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.

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Bristol Bay Native Association

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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 <i>(Brief Status Overview of Mitigation Actions)</i>

Date	Evaluator	Comments <i>(Brief Status Overview of Mitigation Actions)</i>

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								
	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
	Federal-aid Highway Apportioned Funds	23							X			X			X
Department of Transportation - Federal Highway Administration	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	
	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-Page1.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/ACCA.P.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/aos.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=&dvalue=&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 Army 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](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:	<i>(Name / Department)</i>

MITIGATION ACTION PROGRESS REPORT

Progress Report Period:	<u>From Date:</u>	<u>To Date:</u>
Action / Project Title:		
Responsible Agency:		
Contact Name:		
Contact Phone / Email:	<u>Phone:</u>	<u>Email:</u>
Project Status:	<input type="checkbox"/> Project Completed <input type="checkbox"/> Project Canceled <input type="checkbox"/> Project on Schedule Anticipated completion date: _____ <input type="checkbox"/> 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

Ekuk Village Council

**Resolution No. _____
Tribal Hazard Mitigation Plan Adoption Resolution**

WHEREAS, the Native Village of Ekuk hereafter “Tribe” is a federally recognized tribe; and

WHEREAS, the Ekuk Village 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 Native Village of Ekuk 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 Ekuk 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 Ekuk Village 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

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*.

Tribal Jurisdiction: Native Village of Ekok	Title of Plan: Native Village of Ekok Tribal Hazard Mitigation Plan [2019 – 2024]	Date of Plan: <i>July 2019</i>
Tribal Point of Contact: Jennifer Robinette	Address: Ekuk Village Council PO Box 530 Dillingham, AK 99576	Email: jmpoindexter@alaska.edu
Title: Environmental Coordinator		
Agency: Ekuk Village Council		
Phone Number: 907-843-1290		

State Reviewer (if applicable):	Title:	Date:
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FEMA Reviewer: Josh Vidmar Kate Skaggs John Schelling	Title: CERC CERC Mitigation Planner FEMA Hazard Mitigation Planning Manager	Date: 04/30/2019 05/10/2019 05/12/1019
Date Received in FEMA Region 10	04/15/2019	
Plan Not Approved	05/12/2019	
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	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)]	Sec. 3, PDF 15-19 App. A, PDF 79-101 App. B, PDF 103-152	X	
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)]	Sec. 3.3, PDF 17-19 App. A, PDF 79-101 App. B, PDF 103-152	X	
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)]	Sec. 3.3.1, PDF 19 App. B, PDF 103-152	X	
A4. Does the plan describe the review and incorporation of existing plans, studies, and reports? [44 CFR § 201.7(c)(1)(iii)]	Sec. 3.4, PDF 19-20 Sec. 8, PDF 69-71	X	
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)]	Sec. 3.5, PDF 20-21	X	
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)]	Sec. 4, PDF 23-25 App. C, PDF 155-159	X	
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)]	Sec. 4.4, PDF 25	X	

1. Standard Regulation Checklist Regulation (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
<u>ELEMENT A: REQUIRED REVISIONS</u>			
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)]	Community Profile: Sec. 2, PDF 13-14 Risk Assessment: Sec. 5, PDF 27-31 Earthquake: Sec. 5, PDF 31-34 Erosion: Sec. 5, PDF 36 Flood: Sec. 5, PDF 37-38 Landslide: Sec. 5, PDF 38 Severe Wind: Sec. 5, PDF 39-41 Tsunami: Sec. 5, PDF 42 Wildfire: Sec. 5, PDF 42-47 Maps: Figures, PDF 75-77	X	

1. Standard Regulation Checklist Regulation (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
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)]	Earthquake: Sec. 5, PDF 34-35 Erosion: Sec. 5, PDF 36-37 Flood: Sec. 5, PDF 38 Landslide: Sec. 5, PDF 38-39 Severe Wind: Sec. 5, PDF 41 Tsunami: Sec. 5, PDF 42 Wildfire: Sec. 5, PDF 47	X	
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)]	Earthquake: Sec. 5, PDF 31-34 Erosion: Sec. 5, PDF 36 Flood: Sec. 5, PDF 37-38 Landslide: Sec. 5, PDF 38-39 Severe Wind: Sec. 5, PDF 41 Tsunami: Sec. 5, PDF 42 Wildfire: Sec. 5, PDF 42-47 Community Assets: Sec. 5.2, PDF 48-49 Risk Analysis: Sec. 5.3, PDF 49-54 Vulnerability: Sec. 5.4, PDF 55	X	
<u>ELEMENT B: REQUIRED REVISIONS</u>			
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)]	Sec. 6.1, PDF 57-59	X	
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)]	Sec. 6.2, PDF 59-60 App. D, PDF 163-204	X	

1. Standard Regulation Checklist Regulation (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
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)]	Sec. 6.3, PDF 61	X	
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)]	Sec. 6.5, PDF 63-64 App. A, PDF 97		X
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)]	Sec. 6.4, PDF 61-62 Sec. 6.5, PDF 63-64 App. A, PDF 97	X	
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)]	Sec. 6.6, PDF 65 App. E, PDF 207-209	X	
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)]	Sec. 6.5, PDF 62-64 Sec. 6.7, PDF 65 App. E, PDF 207-209	X	
ELEMENT C: REQUIRED REVISIONS			
Element C4. Mitigation actions are not presented for Earthquake, Severe Wind, and Tsunami hazards in the Mitigation Strategy. If these were developed, please provide mitigation actions for them or a justification as to why there are no actions to minimize risks from these identified hazards.			
ELEMENT D. PLAN UPDATES			
D1. Was the plan revised to reflect changes in development? [44 CFR § 201.7(d)(3)]	N/A. This is a new plan.		
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. This is a new plan.		
D3. Was the plan revised to reflect changes in priorities? [44 CFR § 201.7(d)(3)]	N/A. This is a new plan.		
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. ASSURANCES AND PLAN ADOPTION			

1. Standard Regulation Checklist Regulation (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
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)]	Sec. 7, PDF 67	X	
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)]	Sec. 7, PDF 67 App. F, PDF 213	X	
<u>ELEMENT E: REQUIRED REVISIONS</u>			

SECTION 2: STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths

- Scans of the original meeting materials, including agendas, meeting minutes, and sign-in sheets are included as an appendix to the plan. This helps to validate the information provided in the body of the plan.
- Even though the planning process was very condensed, it was thorough and incorporated members from throughout the community.
- The original emails for the planning process are included as an attachment, which shows the exact communications that took place.

Opportunities for Improvement

- The planning process was relatively short. If possible for future updates, try to hold additional meetings over a longer period of time to allow people more time to contribute to the plan's development. However, given the remote location, this may not be possible.
- The Census describes that Village of Ekuk does not have a year-round permanent population, with only seasonal residents. For future planning, consider if a hazard mitigation plan is the most effective planning process to support the residents or if there is another plan that the Village could join. Alternative discussions and processes could be more helpful than this HMP process, which encourages communities to manage grants for FEMA Hazard Mitigation Assistance. Reach out to John Schelling directly, contact information in the review tool table, for more information.

Element B: Hazard Identification and Risk Assessment

Plan Strengths

- The community uses its seasonal occupation as reasoning for why winter hazards are not profiled.
- Table 5-11 shows the relative vulnerability of each critical facility to the identified hazards.
- Previous occurrences for Earthquakes are shown three times to capture the best information and context for the community: those closest to the community, greatest magnitude, and the most recent. Consider using a similar process to capture occurrences for other hazards.

Opportunities for Improvement

- The hazard profiles are relatively short and don't relate well back to other information in the plan, such as the community profile or mitigation strategy. In future drafts of the plan, link this information more closely. The more information about how hazards can affect the community, as well as how they *have* affected it, is always better. Try to be as specific as possible about impacts.

- For historical events, describe how these specifically impacted the area, including any damages or injuries that occurred as a result.
- Although the community does not have a wintertime population, it may be good to note if the physical infrastructure of the Village is impacted at all during the winter months.

Element C: Mitigation Strategy

Plan Strengths

- The community analyzed multiple mitigation actions, prioritizing a few out of the group.
- The project implementation worksheets in the appendix provide a quick and efficient way to keep track of projects during the plan’s lifetime.
- Maps in the appendix show where the problem locations are within the community, and what potential projects can be implemented.

Opportunities for Improvement

- Some of the actions identified in the Mitigation Strategy are more preparedness-focused than mitigation. In future drafts, consider revising these to be more focused on mitigation.
- As mitigation projects are completed, consider adding a section to the plan that talks about their relative successes or lessons learned during the implementation process.
- Although the plan takes into account nearly every hazard, mitigation actions for each one are not provided. It is strongly recommended that if hazards are identified as significant risks, that they receive mitigation actions. If they are not truly risks, then they may not need to be included in the plan, as was indicated with Avalanches.

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Plan Strengths

- N/A. This is a new plan.

Opportunities for Improvement

- N/A. This is a new plan.