LEVELOCK VILLAGE

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
AEA	Alaska Energy Authority
ATV	All-Terrain Vehicle
BBAHC	Bristol Bay Area Health Corporation
BBHA	Bristol Bay Housing Authority
BBNA	Bristol Bay Native Association
BIA	Bureau of Indian Affairs
Bristol	Bristol Engineering Services Company, LLC
CDBG	Community Development Block Grant
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
City	City of Levelock
Community	Levelock
Council	Levelock Village Council
DCCED	State of Alaska Department of Commerce, Community, and Economic Development
DHS&EM	Homeland Security and Emergency Management
DOT&PF	Alaska Department of Transportation and Public Facilities
DOTID	Department of Transportation and Infrastructure Development
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMA	Flood Mitigation Assistance
GPS	Global Positioning System
HMGP	Hazard Mitigation Grant Program
ID	Identification
IGAP	Indian General Assistance Program
km	kilometer
LRTP	Long Range Transportation Plan
MM	Modified Mercalli Scale
mph	mile per hour

ACRONYMS AND ABBREVIATIONS (continued)

NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PDM	Department of Homeland Security Pre-Disaster Mitigation
THMP	Tribal Hazard Mitigation Plan
Tribe	Levelock Village
TTSP	Tribal Transportation Safety Plan
USACE	US Army Corps of Engineers
USGS	US Geological Survey

EXECUTIVE SUMMARY

The Tribal Hazard Mitigation Plan (THMP) for Levelock, 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 Levelock Village (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 Levelock 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 and can result in disruptions to the Community's power and communications, and damages to older structures.
- Erosion – Erosion along the banks of the Kvichak River continues to threaten the Community. Property owners have relocated, bulkhead pilings are becoming exposed and damaged, and other critical facilities are being threatened.
- Extreme Cold – Extreme cold causes pipes to break, and impacts vehicle use and plan access. These temperatures also cause frostbite to residents and hunters.
- Flood – Roads and homes in low lying areas along the shore of the Kvichak River are impacted by flooding.
- Severe Wind – High wind events can result in damage to structures, a reduction of visibility in winter due to blowing snow, decreased quality of air due to dust, and limits the accessibility of the Community via air transportation.
- Severe Winter Weather – Severe winter weather events and cold temperatures can result in power outages, and limits air transportation in and out of the Community.

It can also present a hazard to residents traveling to and from neighboring communities via local trail systems.

- Volcano – Ash from the number of active volcanos along the Alaska Peninsula and Cook Inlet has an impact on air transportation in and out of the Community. This also has an impact on equipment and community members.
- Wildfire – Wildfires destroy subsistence resources, structures, and is a sever risk to human life. The smoke from nearby wildfires decreases air quality in the Community and is a hazard 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.
- Prevent damage to structures and infrastructure.
- 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 extreme cold conditions.
- Reduce the possibility of damages due to floods.
- Reduce the possibility of damages due to severe wind.
- Reduce the possibility of damages due to severe winter weather.
- Reduce the possibility of damages due to volcanos.
- 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 and medium priority mitigation actions.

- Finish the Emergency Plan, and educate community residents about the plan.
- Upgrade the power system for the Community.
- Identify and improve the airport.
- Develop an agreement with Naknek and Igiugig in case of emergency for emergency evacuation help / site.

- Educate the Community about what to do during an earthquake and what to check after an earthquake.
- Identify a muster point for the Community, and instruct the Community where the muster point is for the Community.
- Identify and acquire appropriate communication devices for the Community for safety purposes (e.g., hand held VHF radios and/or Global Positioning System [GPS]).
- Educate residents through the Levelock Bulletin about cold weather precautions and ways to protect themselves from extreme cold temperatures.
- Improve drainage systems and increase drainage capacity throughout the Community.
- Acquire a communication device and/or GPS tracker for search and rescue efforts during severe winter weather events and other emergencies.
- Update the fire truck.
- Acquire fire extinguishers for community residents and educate on proper usage techniques.

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

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

BBNA represents all tribes within the Bristol Bay Region, and as such provides support for the Federal Emergency Management Agency (FEMA) pre-disaster mitigation planning project. On behalf of the Levelock Village Council (Council), BBNA contracted Bristol Engineering Services Company, LLC (Bristol) for the development of this Tribal Hazard Mitigation Plan (THMP) for Levelock, 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 Levelock Village (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 west bank of the Kvichak River, 10 miles inland from Kvichak Bay. It lies 40 miles north of Naknek and 278 air miles southwest of Anchorage. The Community is located near the Alagnak Wild and Scenic River Corridor. The Community lies at approximately 59.1125 North Latitude and 156.8575 West Longitude (See Figures 1 and 2). The Community is located in Section 28, Township 012S, and Range 045W along the Seward Meridian. The Community is located in the Lake and Peninsula Borough Census Area and the Kvichak Recording District. The area encompasses 14.5 square miles of land (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 low clouds are common during the summer. The river is ice-free from June through mid-November (DCCED, 2018). Annual precipitation ranges from 26 inches of rain to 70 inches of snow. The average winter temperatures range from 4 to 30 degrees Fahrenheit (°F), and the average summer temperatures range from 30 to 66 °F (National Oceanic and Atmospheric Administration [NOAA], November 2013).

2.3 HISTORY

Levelock is a mixed Alutiiq and Yup'ik village. Early Russian explorers reported the presence of Levelock, which they called "Kvichak." The smallpox epidemic of 1837 killed more than half of the residents of the Bristol Bay region and left entire villages abandoned. Kvichak was mentioned during the 1890 census, although the population was not measured. A measles epidemic hit the region in 1900. A 1908 survey of Russian missions identified "Lovelock's Mission" at this site. The worldwide influenza epidemic in 1918-19 again devastated area villages. Koggiung Packers operated a cannery at Levelock in 1925-26. A large fire, attributed to a cannery worker's careless cigarette, threatened the entire village in 1926, but residents dug fire lines that saved their homes. The fire depleted the scarce

wood resources used to heat homes. A second cannery operated from 1928-29. In 1930 the first school was built, and a post office was established in 1939. By this time, families had converted their homes to oil heat. Commercial fishing and subsistence activities are the focus of the community. Sharing is a way of life in this village; no one goes hungry for lack of ability to hunt or fish. Moose first appeared in the area in the 1930s. During the early 1950s, another cannery was in operation (DCCED, 2018).

2.4 ECONOMY

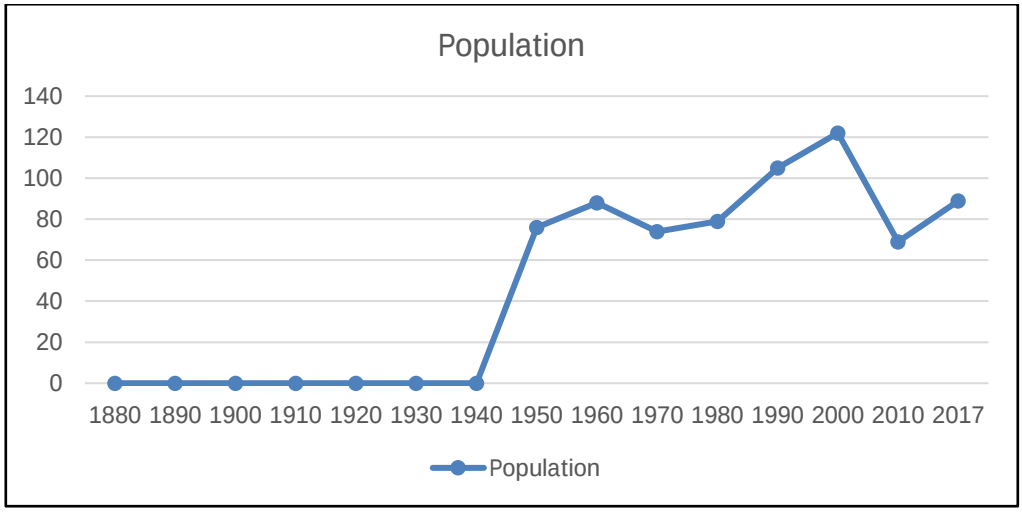
The local government provides the main employment opportunities in the Community (ALARI, 2018). Other Community employment opportunities include trade, transportation and utilities, professional and business services, educational and health services, and others. The Community's primary source for food is derived from a subsistence lifestyle. This lifestyle includes activities such as hunting, fishing, berry picking, and other similar activities (DCCED, 2018).

According to the 2010 Census, the median household income in the Community was $37,750. At that time there were approximately 38 individuals (29 percent [%]) that were reported to be living below the poverty level. In 2010, 49 individuals (75%) were actively employed while 16 individuals (25%) were unemployed (DCCED, 2018).

2.5 DEMOGRAPHICS

The 2017 State of Alaska Department of Commerce, Community, and Economic Development (DCCED) certified population is 89 (DCCED, 2018). Exhibit 2-1 depicts a historic representation of the population of the Community.

Exhibit 2-1: Population History



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

The 2010 census recorded 69 residents with a median age of 35. The Community is principally an Alaska Native community with 84% Alaska Native, 10% White, and 5.8% two or more races. In 2010, the male and female population was 35 and 34 respectively. The 2010 census also revealed that there were 27 households with an average household size of 3 people (DCCED, 2018).

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3.0 PLANNING PROCESS

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

3.1 PLANNING PROCESS

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

The planning process took place from November 28, 2018 to January 23, 2019. The following steps describe the planning process to develop the THMP and incorporates applicable work completed prior to 2018. All planning documents created or used are included in Appendix A.

1. Establish the Planning Team: An initial meeting was held with the Council to establish a point of contact and identify other team members. The titles and organizations of the Planning Team members are identified in Table 3-1. During the initial meeting there was a brief discussion about hazards that affect the community as described in the Risk Assessment (Section 5.0).
2. Education of the Planning Team: The THMP planning process was described to the Planning Team on November 28, 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
Sam Wassillie	Administrator	Levelock Village Council
Greg Andrew Jr.	Roads Planner	Levelock Village Council
Shirley Andrew	Environmental Protection Agency (EPA) / Indian General Assistance Program (IGAP)	Levelock Village Council
Raymond Apokedak	Vice President	Levelock 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 January 24, 2019 in the Community to educate and receive feedback on the THMP. During the meeting, participants were given the opportunity to discuss how they have personally been impacted by the identified hazards in their community. They were also given the opportunity to discuss mitigation strategies that they felt would help prevent future losses due to the hazards. Additionally, the community was asked how they would like to be included in the remaining planning process and throughout the implementation of the mitigation strategies.

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

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

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

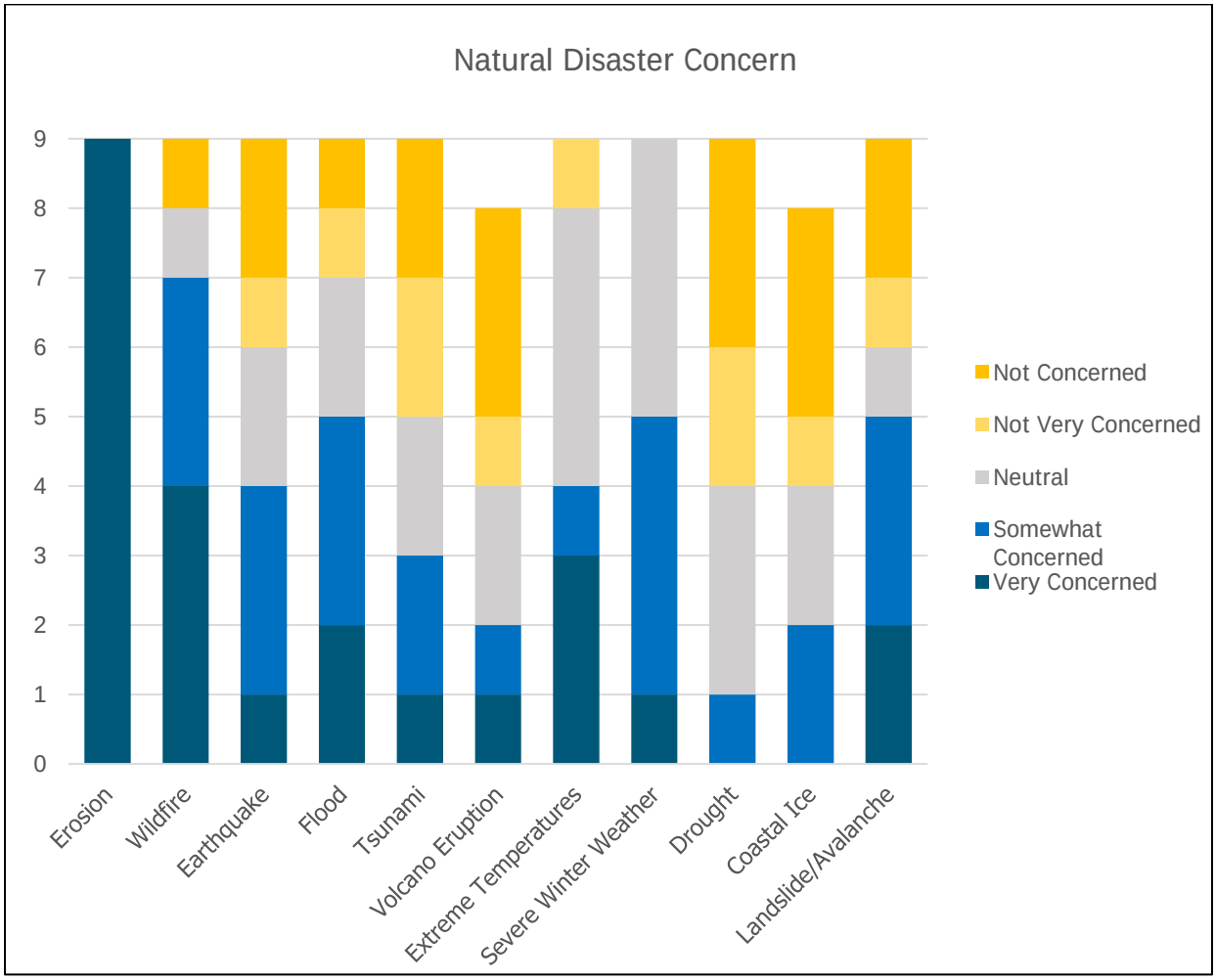
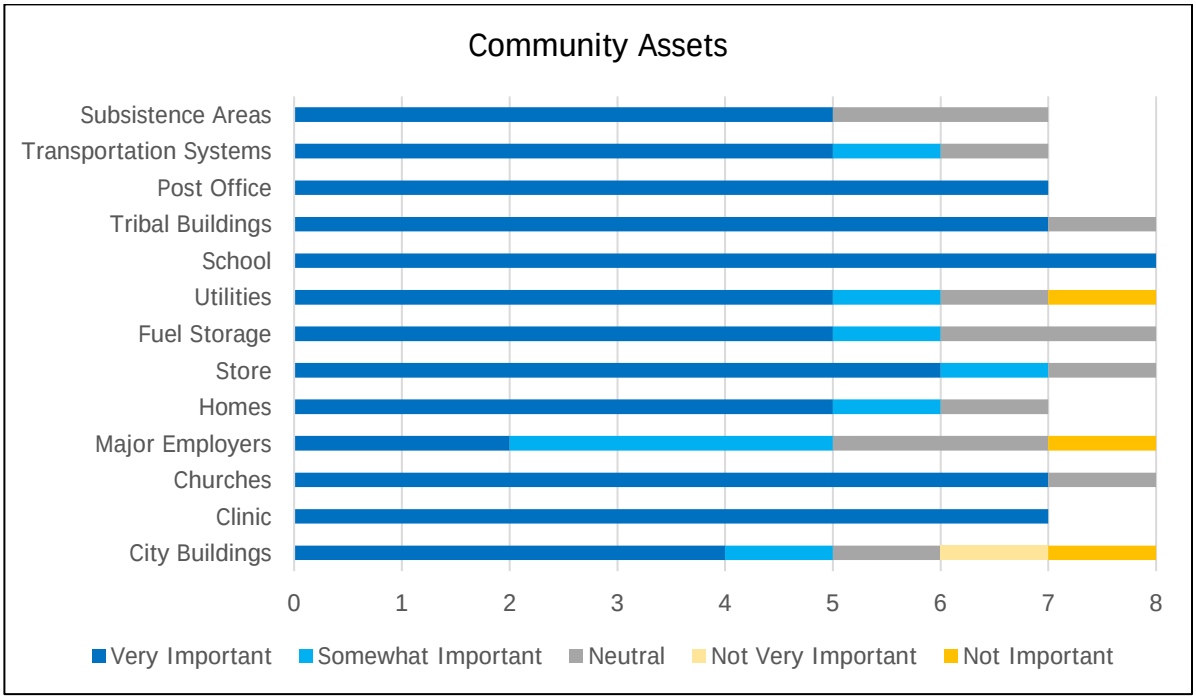


Exhibit 3-2: Community Assets (Survey Question #7)



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	Levelock Natives Limited	George Wilson Jr. (President)	apokray@hotmail.com
Regional for Profit	BBNC	Jason Metrokin (President)	jmetrokin@bbnc.net
Non-Profit Agency	BBNA	Gayla Hoseth (Natural Resources Director)	ghoseth@bbna.com

Table 3-2 (Continued): Stakeholder Contacts

Stakeholder Type	Stakeholder	Contact Person (Title)	Contact Email
Non-Profit Agency	BBNA	Carla Akelkok (VPSO Program Manager)	cakelkok@bbna.com
Economic Development	BBNA	Kristina Andrew (Program Manager)	krandrew@bbna.com
Regional Housing	Bristol Bay Housing Authority (BBHA)	Brenda Akelkok (Executive Director)	bakelkok@bbha.org
Regional Hospital	Bristol Bay Area Health Corporation (BBAHC)	Robert Clark (CEO)	rclark@bbahc.org
Regional Hospital	BBAHC	Rebecca Coupchiak (CHAP Supervisor)	rcoupchiak@bbahc.org
Village Clinic	BBAHC	Rhea Andrew (Health Aide)	rlandrew@bbahc.org
Borough	Lake and Peninsula Borough	Kate Conley (Borough Clerk)	kateconley@lakeandpen.com
Borough	Lake and Peninsula Borough	Nate Hill (Borough Manager)	manager@lakeandpen.com
School District	Lake and Peninsula School District	Ty Mase (Superintendent)	tmase@lpsd.com
School	Levelock School	Levi Tinney (Principal / Lead Teacher)	ltinney@lpsd.com
Electric Utility	Levelock Electric Cooperative	Danielle Dobkins	levelockelectric@gmail.com
Telephone	Bristol Bay Telephone	Justin Fulton (CEO)	jfulton@bristolbay.com

Table 3-2 (Continued): Stakeholder Contacts

Stakeholder Type	Stakeholder	Contact Person (Title)	Contact Email
Telephone	GCI	Lana Woods (Leasing, Permitting, & Compliance Manager)	lwoods@gci.com
State Representative	State of Alaska	Bryce Edgmon (Representative)	representative.bryce.edgmon@akleg.gov
State Senator	State of Alaska	Lyman Hoffman (Senator)	senator.lyman.hoffman@akleg.gov

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

3.4 INCORPORATION OF EXISTING PLANS/STUDIES/REPORTS

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

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

Plans/Studies/Reports Reviewed for this THMP	Summary of Incorporated Content
US Army Corps of Engineers (USACE) Alaska Baseline Erosion Assessment	This report identifies the Community as having erosion issues that will be monitored (USACE, March 2009).
USACE Erosion Assessment	Primary causes of erosion are high tides and strong winds. Approximately 30 to 40 feet of riverbank has been lost within the last 20 years. Community resources and cultural assets are at risk of erosion continues (USACE, November 2007).
State of Alaska Hazard Mitigation Plan	Identifies profiled hazards, provides resources, and provides goals and mitigation strategies identified by the State of Alaska 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).

Table 3-3 (Continued): Existing Plans, Studies, and Reports Reviewed

Plans/Studies/Reports Reviewed for this THMP	Summary of Incorporated Content
Bristol Bay Comprehensive Economic Development Stategy: 2017 – 2021	This report identifies the support of an all tide dock, airport extension, barge and boat haul-out storage area, and a heated heavy equipment garage (BBNA, 2018 Update).
Lake and Peninsula Borough Multi-Jurisdictional Hazard Mitigation Plan Update	This plan identifies the hazards that have had an impact on the borough. It also provides the Borough mitigation actions and goals (Lake and Peninsula, 2015).
Levelock Watershed Community Planning Project Final Summary Report	This report identifies erosion being an issue in the Community along the riverbanks due to increased boat traffic (Levelock Village Council, 2005).
Levelock Strategic Plan	This report identifies critical issues in the Community. Some of these issues deal with improving road and riverine bank erosion. This report also identifies Community goals and assets (Levelock Village Council, 2000).
Levelock Long Range Transportation Plan (LRTP)	This plan identifies the Community's need for snow removal for the months of October throuhg April, and their Tribal Transportation Priority list. This list identifies their need to continue working to improve and maintain existing roadways in the Community (Levelock Traditional Council, 2010).

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 Levelock 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.

4.0 PLAN MAINTENANCE

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

4.1 MONITORING

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

4.2 EVALUATING

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

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

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

4.3 UPDATING

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

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

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

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

Table 4-1: Plan Maintenance Timeline

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

4.4 PUBLIC INVOLVEMENT IN THE PLAN MAINTENANCE PROCESS

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

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

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

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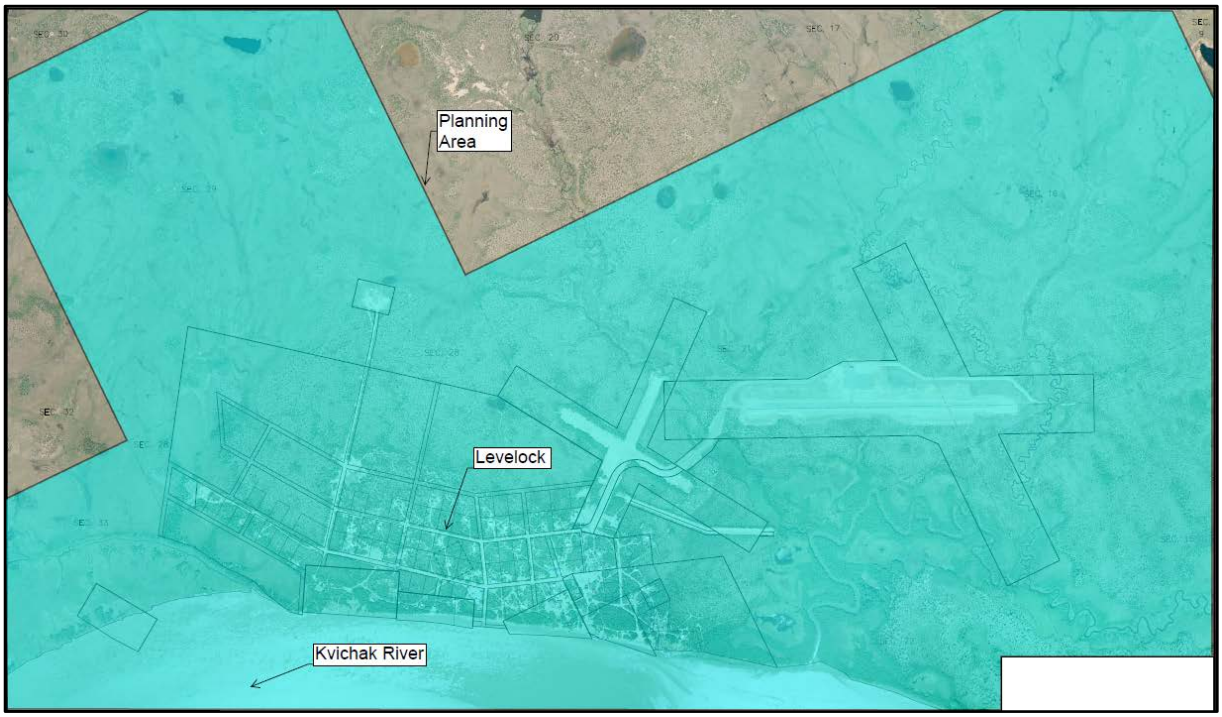
5.0 RISK ASSESSMENT

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

The Community planning area is shown in Exhibit 5-1. The planning area encompasses Sections 16, 21, 22, 27, 28 and 29 of Township 12 South Range 45 West, of the Seward Meridian. Community trails and subsistence areas may extend beyond the sections shown.

Exhibit 5-1: Planning Area



5.1 HAZARD ANALYSIS

The first step in the risk assessment is to identify the natural hazards that could affect the planning area. Natural hazards result from uncontrollable or unexpected natural events. The Planning Team reviewed 14 possible hazards that could affect the planning area. Each hazard was evaluated based on a range of factors. Table 5-1 through Table 5-4 provide the classifications and definitions of each factor (FEMA, March 2013). These factors included the location of affected area (Table 5-1), the maximum extent or magnitude of the event (Table 5-2), and the probability of future events (Table 5-3). Based on the rankings from Table 5-1 through Table 5-3 the possible hazards were then ranked again based on their

overall impact on the Community (Table 5-4). The hazard evaluation worksheet (Worksheet 1) is located in Appendix A.

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

Table 5-1: Location

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

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

Table 5-2: Maximum Extent or Magnitude

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

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

Table 5-3: Probability of Future Events

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

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

Table 5-4: Overall Impact

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

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

Table 5-5: Significant Hazards in the Planning Area

Hazard	Significant (Yes/No)	Explanation
Avalanche	No	Avalanches do not occur in the Community due to the generally flat terrain.
Drought	No	The Community is not concerned about drought as they experience plenty of precipitation year round, and the river runs full. Vegetation is thick and green every summer.
Earthquake	Yes	The Community lies between two major fault lines: the Denali Fault to the West and the Bruin Bay Fault to the East. Earthquakes occur frequently in the Community, and can result in damage to buildings, and utilities.
Erosion	Yes	The Community is situated along the Kvichak River. The river is experiencing erosion along the banks, approaching homes and critical infrastructure more every year.
Extreme Cold	Yes	Residents are experiencing less severe cold days than in the past. However, they still do occur and the effects impact the Community. Severe cold days have caused pipes to burst and affects airplane and automobile engines.
Extreme Heat	No	The Community does not experience long durations of extremely warm temperatures.
Flood	Yes	Flooding can occur due to heavy rainfall, ice jams in the river, or tide surges. Flooding can compromise homes and roadways.
Landslide	No	The community does not have slopes or areas where landslides occur.
Severe Wind	Yes	Strong wind storms occur every fall in the Community. These storms can damage roofs and structures, limit plane access to the Community, and decrease air quality due to dust.
Severe Winter Weather	Yes	Severe winter weather can affect plane access to the community for travel, food and supplies, and medical emergency evacuations. Whiteout conditions can be dangerous for travel between Communities on trails. Also, Freezing rain can have an impact on plane service to the Community..

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

Hazard	Significant (Yes/No)	Explanation
Subsidence	No	The Community is not concerned with the effects of subsidence since occurrences are minor and infrequent.
Tsunami	No	The Community is not located on the coast of a large body of water, therefore is not impacted by tsunamis.
Volcano	Yes	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 corrosive properties of volcanic ash are harmful to equipment and detrimental to human health.
Wildfire	Yes	There have been 19 fires within roughly 25 miles of the Community since 1952, totaling about 10,730 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.

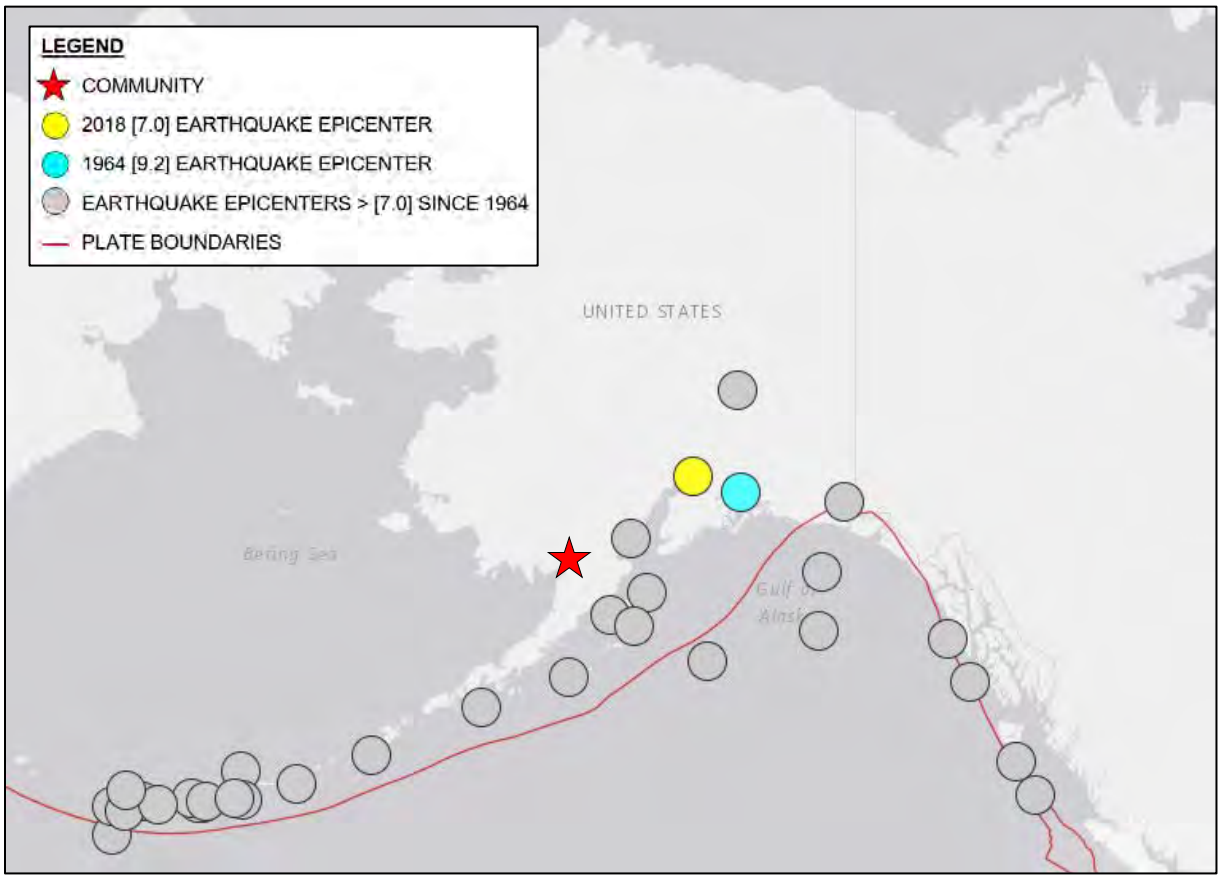
Landslides, liquefaction, and tsunamis are some other damaging effects of an earthquake. Earthquake-induced landslides are the down-slope movement of rock, soil and other debris due to ground movement on a steep mountain or hillside slope. Liquefaction occurs when saturated, unconsolidated sand or soil 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 342 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 5.6 on the Richter scale, located 46.5 miles away near King Salmon, AK in July 2016. The closest earthquake to occur near the Community above a magnitude 2.5 was a magnitude 3.4 earthquake that occurred 25.7 miles away in November 1998 (USGS, 2018). More historic earthquake information surrounding the Community is provided in Section 5.1.2.3.

Exhibit 5-2: Major Earthquakes in Alaska



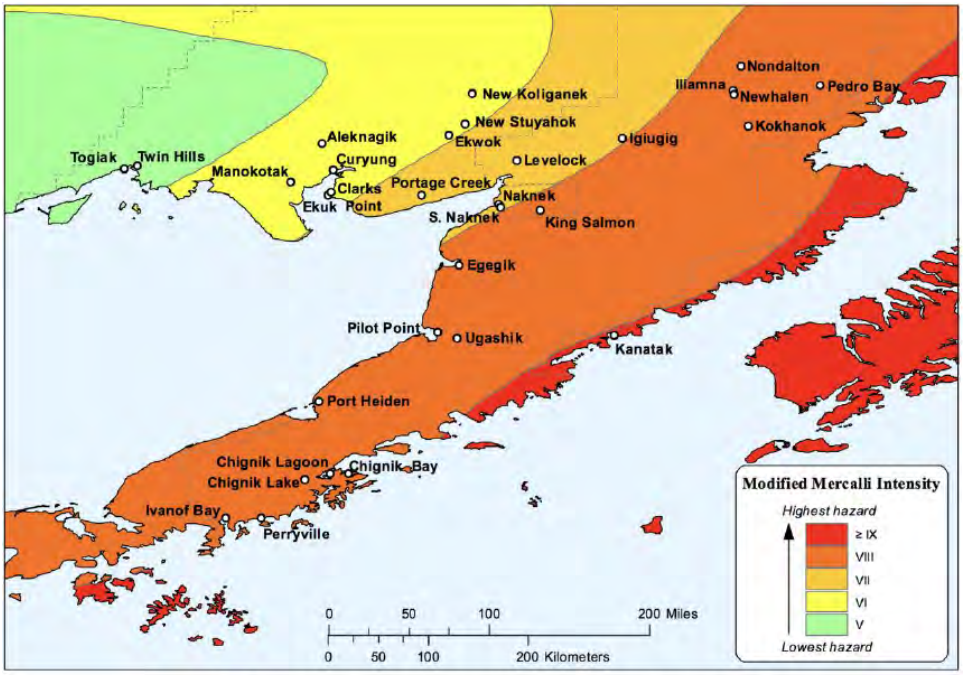
5.1.1.2 Extent

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 the event saying river ice was visibly rippling. 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 VII MM Intensity, indicating the earthquake risk is moderate (Natalia Ruppert, Presentation, November 22, 2016).

Exhibit 5-4 provides a description of damages that can occur at each magnitude of the MM. This exhibit also provides an approximate Richter Scale equivalent for each MM intensity (USGS, 2019 and SMS Tsunami Warning, 2018).

Exhibit 5-3: Bristol Bay Earthquake Hazard Map



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

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

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

The largest local concern regarding earthquakes in the Community is disruptions in communications, power, and the impact the earthquake could have on the airport and other transportation systems. The Community relies on groundwater for drinking water and household use. A large earthquake nearby the Community could potentially alter the mineralogy or quality of groundwater.

Seismic activity can cause damage to older community structures and underground utilities. This activity also has the potential to cause chemical spills if tank connections become loose or break.

5.1.1.3 History of Occurrences

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

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

Date	Magnitude	Distance from the Community (miles)	Location
Nov-1998	3.4	25.7	Alaska Peninsula
Feb-2003	5.5	28.1	Alaska Peninsula
Nov-1994	3.9	32.0	Alaska Peninsula
Jan-2004	4.2	32.2	Alaska Peninsula
Feb-2018	2.8	32.3	11 kilometer (km) WSW* of King Salmon
Jun-2015	2.8	33.1	51 km WNW* of King Salmon
Apr-2015	3.2	36.7	48 km W* of King Salmon
May-2002	2.7	38.1	Alaska Peninsula
Nov-1984	4.6	38.1	Alaska Peninsula
Jun-1995	3.9	38.4	Alaska Peninsula

***** West Southwest (WSW), West Northwest (WNW), West (W)

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

Date	Magnitude	Distance from the Community (miles)	Location
Jul-2016	5.6	46.5	26 km SSE* of King Salmon
Feb-2003	5.5	28.1	Alaska Peninsula
May-1998	5.4	78.2	Alaska Peninsula
May-1998	5.4	84.3	Alaska Peninsula
May-1998	5.3	85.6	Alaska Peninsula
Jun-2010	4.9	69.0	Alaska Peninsula
May-1998	4.9	78.0	Alaska Peninsula
May-1998	4.7	82.0	Alaska Peninsula
Jan-1983	4.7	82.4	Alaska Peninsula
Mar-2001	4.6	92.2	Alaska Peninsula

***** South Southeast (SSE)

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

Date	Magnitude	Distance from the Community (miles)	Location
Nov-2018	2.5	43.4	21 km SSE* of King Salmon
Oct-2018	2.7	79.2	81 km S* of King Salmon
Sep-2018	2.5	95.2	112 km SSW* of King Salmon
Sep-2018	2.7	42.6	22 km SE* of King Salmon
Jul-2018	2.5	91.8	107 km SSW* of King Salmon
Jun-2018	3.0	84.3	87 km SSE* of King Salmon
Jun-2018	3.4	93.0	102 km S* of King Salmon
May-2018	3.0	87.5	93 km S* of King Salmon
May-2018	2.8	96.4	113 km SSW* of King Salmon
Apr-2018	2.5	96.0	113 km SSW* of King Salmon

* South Southeast (SSE), South (S), South Southwest (SSW), and Southeast (SE)

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 erosion along the banks of the Kvichack River. Significant erosion areas are identified on Figures 1 and 2.

5.1.2.2 Extent

The Planning Team has classed the area affected by erosion as "extensive." The erosion of highest concern is the river eroding the banks to the point where homes and the Community's infrastructure (utilities, roads etc.) are undermined, and the bulkhead pilings are becoming exposed. Reportedly, 2-3 feet of the bank is lost every year to erosion along the entire Community. Community assets located near erosion areas include the Community bulk fuel facility, the Russian Orthodox Church, the dock structure, septic and leach fields, and teacher housing along with several sites of cultural value to the Community. According to a 2007 Baseline Erosion Assessment Paper for Levelock developed by the U.S. Army Corps of Engineers, riverine processes, tidal floods, and seasonal storm surges are the primary cause of riverbank erosion (USACE, 2007). The study concluded a severe extent of erosion.

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. A substantial flood occurred in 1980, taking away the dock and flooding 6 houses. An estimated 30-40 feet of riverbank was lost between 1987 and 2007. (USACE, 2007)

The following impacts have been witnessed or experienced by Community members:

- One resident stated that they have had to move their home due to erosion issues.
- Another resident stated that septic tanks pipes are exposed along the bank, and that well casings are left on the beach.

5.1.2.4 Probability of Future Events

Significant erosion is visible along the riverbanks every year, particularly after spring breakup. It is highly likely for erosion to continue to occur in the Community due to ice jams, storms, wind, and the continuous flow of the river.

5.1.3 Extreme Cold

Extreme temperatures constitute different conditions in different parts of the country. In colder climate regions such as Alaska, extreme cold events involve temperatures -10 °F and below. Extreme cold temperatures can occur after a winter storm or during long durations of storm inactivity. Fatalities and injuries can occur from extreme cold by causing hyperthermia or frostbite.

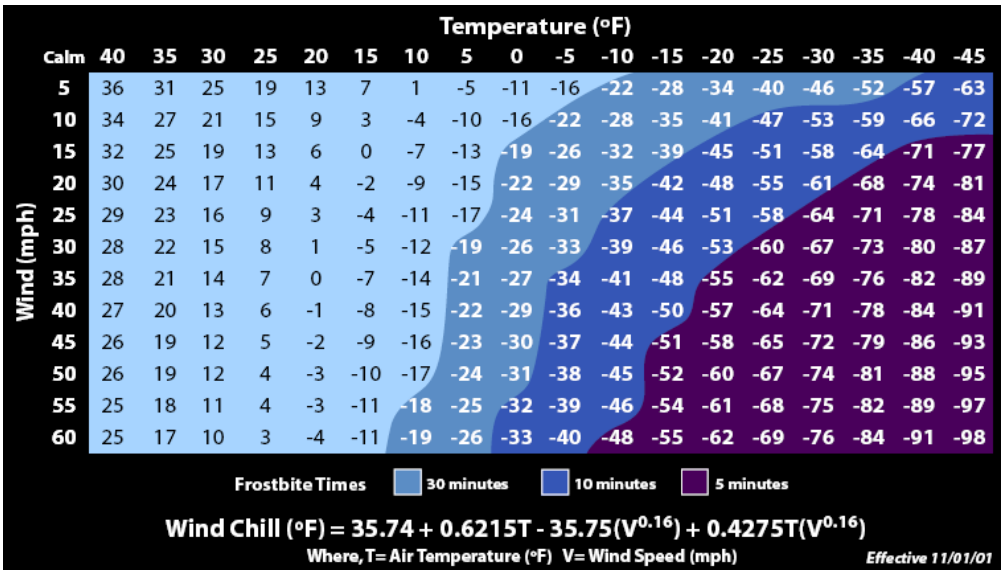
5.1.3.1 Location

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

5.1.3.2 Extent

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

Exhibit 5-5: Wind Chill Chart



The Community has experienced temperatures as low as -34 °F in 2010 and as high as 88 °F in 2015 (Weather Underground, 2018). There have been no known fatalities, injuries, or illnesses caused by extreme cold in the Community. However, residents are impacted by these events in various ways.

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

The Community relies upon air transportation to receive mail, supplies and medical evacuations. Planes will not fly in extremely cold temperatures which has an impact on getting people to safety for medical emergencies or getting the needed supplies to the Community.

5.1.3.3 History of Occurrences

History of extreme temperature events is based on accounts from community members. According to residents, extreme cold is occurring less often with a trend to warmer temperatures. Extreme cold events occur at least once every winter and can last up to several weeks at a time.

Data is not readily available for the Community, however, temperatures have been recorded in the nearby community of New Stuyahok, which is roughly 28.3 miles away. These communities are assumed to experience similar temperatures. Table 5-9 identifies historical extreme temperatures recorded in the Community (Weather Underground, 2018).

Table 5-9: Historical Extreme Temperature Events

Year	Minimum Temperature (°F)	# of Days Below -10 °F
2018	-16	4
2017	-23	13
2016	-14	4
2015	-14	3
2014	-14	3
2013	-17	7
2012	-31	33
2011	-29	11
2010	-34	18
2009	-20	14
2008	-27	19

5.1.3.4 Probability of Future Events

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

5.1.4 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.

5.1.4.1 Location

Areas in the Community at risk of flooding are depicted on Figures 1 and 2. FEMA flood maps are not available for the Community. The low-lying areas adjacent to the Kvichak River and the beach have the highest risk. Additionally, many roads and properties in the Community have poor drainage.

5.1.4.2 Extent

During long periods of heavy rainfall, areas can flood and maintain standing water for days or weeks. The barge landing, store, and village council office are near the regularly flooded areas along Main Street. During tidal surges and high winds, water can get within 300 feet of homes. Utilities, septic systems, roads and other infrastructure may also be at risk during high rain due to poor drainage.

5.1.4.3 History of Occurrences

Flooding occurs every spring along roads and the beach in low lying areas. Standing water is common during this time as shown in Figures 1 and 2. Six homes have been reported to have been flooding in 1980 due to strong winds and high tides (USACE, 2007).

5.1.4.4 Probability of Future Events

It is highly likely flooding will continue to happen in the Community due to the continuing effects of rain and storm surges.

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 5-6 identifies the scale and the consequences that are possible at the different levels as well as, the impacts to ocean water movement (NOAA NWS, 2013). Any wind event, Force 9 and higher is considered severe and can cause damage within the Community.

Exhibit 5-6: Beaufort Wind Scale

The Beaufort Wind Scale

Force	Name	Wind Speed knots	Wind Speed 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 fall months. These conditions can cause loose debris to blow around the Community and detach roofing or siding from homes and other structures.

The Community is surrounded by trees. Severe windy conditions can cause trees to blow over and damage homes, cause power outages, and interrupt communications. When power outages happen during cold temperatures it produces a hazard to residents.

In the winter, severe winds can cause snowdrifts that impacts visibility and travel throughout the Community. In the summer and fall months, severe wind conditions produce an unhealthy amount of dust. The airport runway and all 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 increases risks to residents if there is a lack of needed supplies, medications, and mail. This also decreases the ability to evacuate for medical emergencies.

Wind contributes to the Community erosion issue. Strong winds can cause large waves that continue to erode the riverbank.

5.1.5.3 History of Occurrences

Wind data is not readily available for the Community, however, wind speeds have been recorded in the nearby community of New Stuyahok, which is roughly 28.3 miles away. These communities are assumed to experience similar wind speeds. Table 5-10 identifies historical severe wind events recorded in the Community (Weather Underground, 2018).

Table 5-10: Historical Severe Wind Events

Year	Max Wind Speed (mph)	# of Days Above 47 mph
2018	45	0
2017	39	0
2016	39	0
2015	39	0
2014	45	0
2013	48	1
2012	39	0

Table 5-10: Historical Severe Wind Events (continued)

Year	Max Wind Speed (mph)	# of Days Above 47 mph
2011	38	0
2010	69	1
2009	59	3
2008	38	0

According to locals, severe windstorms occur more than once per year, usually in the fall. In 2010, the Community experienced a wind event that recorded 69 mph winds, which is classified as "a violent storm" and barely under hurricane winds.

5.1.5.4 Probability of Future Events

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

5.1.6 Severe Winter Weather

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

5.1.6.1 Location

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

5.1.6.2 Extent

Air transportation is essential to the Community. Severe winter storm conditions create a hazard for planes to land in the Community. These storms hinder the ability to evacuate for medical emergencies, and receive needed supplies, medications, and mail due to ice or snow on the runway. There have been times in the past when planes have not been able to land in the Community for several days at a time.

Traveling in severe winter conditions is dangerous for residents because of the blowing snow and reduced visibility. This is exacerbated by colder temperatures because of their effect on the snow ratio. Due to the average temperatures in Alaska being lower than the rest of the United States during winter months, a snow ratio of 1:20 was assumed. This means that for every 1 inch of precipitation, there is 20 inches of snow fall. With extreme

cold, the snow ratio can increase up to 1:50. This 'fluffy' snow is hard to manage because it becomes airborne easily (AccuWeather, 2019).

Blowing snow is a hazard to residents. Many residents travel between nearby villages, or go hunting in the winter on all-terrain vehicles (ATV) and follow a series of trail markers to guide them to their destination. This can be dangerous during severe winter conditions. During a blizzard, it is challenging to see trail markers. As a result, residents can become lost and are at risk of frost bite and hypothermia. These conditions also make it hard to see while driving around the Community.

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

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

5.1.6.3 History of Occurrences

Precipitation data is not readily available for the Community, however, precipitation has been recorded in the nearby community of New Stuyahok, which is roughly 28.3 miles away. These communities are assumed to experience similar amounts of precipitation. Table 5-11 identifies historical severe winter weather events recorded in the Community between the months of November and March for the past six years. Precipitation data was not available between 2008 and 2012 (Weather Underground, 2018).

Table 5-11: Historical Severe Winter Weather Events

Year	Maximum One Day Precipitation (inches)	# of Days Above 1.0 inch
2018	0.69	0
2017	0.41	0
2016	1.03	1
2015	0.65	0
2014	0.17	0
2013	0.28	0

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

- Runway clearing by the operator took several hours a day in the past
- Freezing rain caused poor runway conditions. This creates conditions that make the Community inaccessible by planes. One pilot landed and blew out his tires trying to stop too quickly.
- Whiteout conditions have caused hunters to get lost, requiring search and rescue.
- Existing markers between the Community and New Stuyahok are hard to locate in inclement conditions.
- People have experienced frostbite on their extremities and hypothermia during travel to nearby communities like Naknek.

5.1.6.4 Probability of Future Events

Severe winter weather will likely continue to occur and impact the Community. However, the Community is noticing that they are not getting the amount of snow that they used to get in the past. This is due to the warmer winter temperatures that they are experiencing.

5.1.7 Volcano

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

There are several volcanos within 100 miles of the Community: The Katmai volcanic group and Ukinrek Maars at just under 90 miles away each. Exhibit 5-7 identifies some of the volcanos that can impact the Community with ash fall. The entire planning Community is at risk when ash fall enters the area (see Exhibit 5-1).

Exhibit 5-7: Volcanos Near the Community

5.1.7.1 Extent

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

5.1.7.2 History of Occurrences

Residents in the Community recall the following impacts of volcanic ash:

- Mount Redoubt erupted in 2009. This eruption caused interrupted air transportation throughout the state and Bristol Bay region.

5.1.7.3 Probability of Future Events

Volcanos are anticipated to occasionally affect the Community. Volcanic eruptions are challenging to predict, and ash fall impacts are dependent on wind patterns.

5.1.8 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.

5.1.8.1 Location

A map of wildfires located in and around the Community since 1952 is provided in Exhibit 5-8. 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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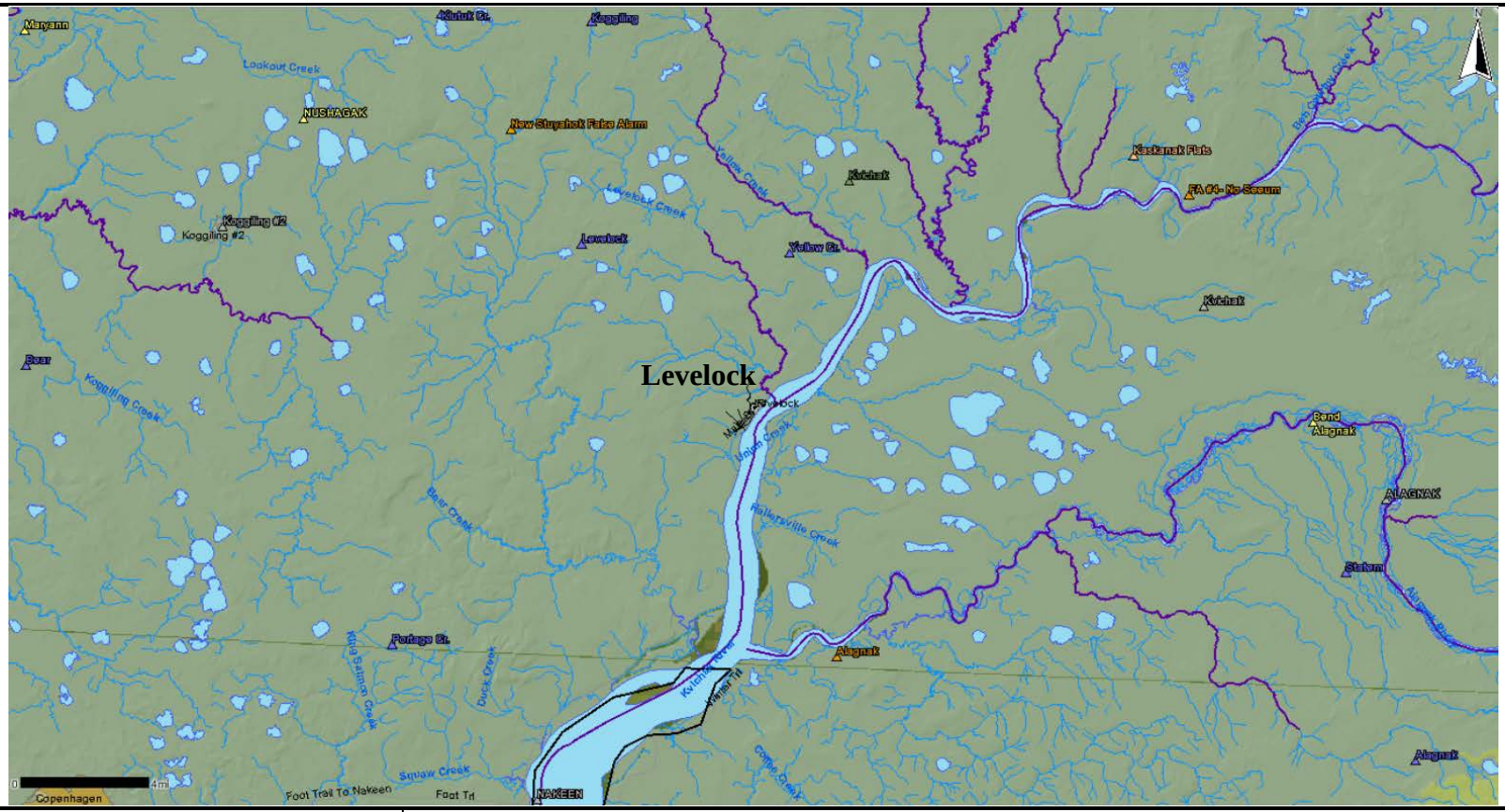
Exhibit 5-8: Community Fire Map



Source: (Alaska Interagency Coordination Center, 2018)

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5.1.8.2 Extent

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

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

Nearby wildfires are a concern for the Community because their only firetruck is damaged due to freezing pipes and is outdated. They also have a Code Red Conex with fire suppression supplies that needs upgrading. They fight fires on a volunteer basis, and do not have a trained or designated team.

5.1.8.3 History of Occurrences

Table 5-12 below provides a list of wildfires and their impacts (in acreage) in or around the Community, within a 25 mile radius (Alaska Interagency Coordination Center, 2018).

Table 5-12: History of Wildfires

Fire Name	Year	Estimated Impact (Acres)	Distance from the Community (Miles)
Yellow Cr.	1980	1	5.3
Levelock	1980	2	6.4
Kvichak	1952	10,000	8.1
Alagnak	2012	78	8.7
Koggiling	1980	0.1	12.5
Portage Cr.	1980	0.1	12.5
NAKEEN	1997	2	13.4
Klutuk Cr.	1980	1	14.8
Kaskanak Flats	1968	8	15.2
NUSHAGAK	1970	1	15.5
Kvichak	1996	0.1	15.6
Koggiling #2	1997	140	16.3
Alagnak	1975	20	18.7

Table 5-12 (Continued): History of Wildfires

Fire Name	Year	Estimated Impact (Acres)	Distance from the Community (Miles)
Bend	1975	10	18.7
Statem	1980	60	20.4
ALAGNAK	1993	1.5	21.2
Bear	1980	3	21.5
Maryann	1974	400	24.4
Alagnak	1980	1	24.6

In August 2019 the Community experienced a wildfire on the outer limits of the Community. Residents evacuated to skiffs while a few residents stayed behind to contain the fire until smokejumpers could arrive. This fire burned 9,345 acres around the Community. See Appendix A for news articles regarding this fire. Exhibit 5-9 is an image of the fire taken by Alexander "Skipper" Tallekpalek (DeMarban, August 2019).

Exhibit 5-9: August 2019 Wildfire Near the Community

5.1.8.4 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 89. 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.

- Andrew's Provisions (Store)
- Village Council Office
- School
- Rainbow Hall Rec. Center
- Clinic

5.2.2 Economy

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

- Andrew's Provisions (Store)
- Student Store (School)
- L.N.L Rentals 1 (Beach House)
- L.N.L Rental 2 (HUD House)
- Post Office
- Bulk Fuel Tank Farm
- Gas Station
- Fish Plant

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
  - Andrew's Provisions (Store)
  - Student Store (School)

  - Village Council Office
  - School
  - School Generator Building
  - Village Power Plant
  - AT&T Alascom
  - Rainbow Hall Rec. Center
  - L.N.L Storage
  - L.N.L Office
  - L.N.L Rentals 1 (Beach House)
  - L.N.L Rental 2 (HUD House)
  - Village Council Storage
  - Baptist Church
  - Russian Orthodox Church
  - Post Office
  - Cemetery
  - Clinic
  - Fish Plant
  - Community Greenhouse
  - GCI Station
  - Boat Storage
- Infrastructure
  - Airport
  - Tribally Owned Equipment (emergency response equipment, and heavy equipment)
  - Roads
  - Trails
  - Boat / Barge Landing Area
  - Bulk Fuel Tank Farm
  - Gas Station
  - Landfill
  - BBTC Cell Tower
  - GCI Tower
  - Overhead Power Lines

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)
- Kvichak River
- Drinking water aquifer

5.3 RISK ANALYSIS

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

information helped the Planning Team determine where the Community is most vulnerable and further helped in the identification of mitigation goals and actions.

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

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Table 5-13: Risks to Vulnerable Assets

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Government	17	Village Council Office	10	59° 6'39.19"N, 156°51'39.67"W	Unknown	x		x	x	x			x
	28	Post Office	1	59° 6'42.84"N, 156°51'37.29"W	$250K	x		x		x			x
Transportation	3	Tribally Owned Equipment	N/A	59° 6'56.42"N, 156°51'38.99"W	Unknown			x			x	x	x
	5	Airport	N/A	59° 7'1.98"N, 156°51'59.00"W	$7M				x	x	x	x	x
	31	Roads	N/A	11.3 Miles	$23M				x		x		
	36	Trails	N/A	Community Wide	--				x		x		

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

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Transportation (Continued)	7	Barge Landing	N/A	59° 6'53.25"N, 156°51'6.70"W	Unknown	x	x		x	x	x		x
	13	Gas Station	1	59° 6'44.26"N, 156°51'33.24"W	$500K	x		x		x			x
	14	Boat Storage	N/A	59° 6'15.38"N, 156°52'1.70"W	--	x	x	x		x			x
Educational	16	School	25	59° 6'45.40"N, 156°51'26.70"W	$25M	x		x		x			x
	18	School Diesel Storage Tanks	N/A	59° 6'45.83"N, 156°51'28.63"W	Unknown	x		x		x			x
	19	School Generator Building	N/A	59° 6'46.20"N, 156°51'31.51"W	Unknown	x		x		x	x	x	x

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

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Medical	4	Clinic	3	59° 6'45.51"N, 156°51'38.67"W	$3M	x		x		x			x
Community	15	Andrew's Provisions (Store)	4	59° 6'36.72"N, 156°51'37.91"W	Unknown	x		x	x	x	x	x	x
	22	Rainbow Hall Rec. Center	70	59° 6'47.09"N, 156°51'35.13"W	Unknown	x		x		x			x
	23	L.N.L Storage	N/A	59° 6'50.06"N, 156°51'27.11"W	Unknown	x		x		x			x
	24	L.N.L Office	1	59° 6' 37.27"N, 156°51'41.23"W	Unknown	x		x		x			x
	34	L.N.L Rentals 1 (Beach House)	N/A	59°6'23.18"N, 156°51'49.59"W	Unknown	x		x		x			x

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

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Community (Continued)	35	L.N.L Rental 2 (HUD House)	N/A	59°6'39.47"N, 156°51'57.56"W	Unknown	x		x		x			x
	25	Village Council Storage	N/A	59° 6'52.98"N, 156°51'45.49"W	Unknown	x		x		x			x
	26	Baptist Church	10	59° 6'48.65"N, 156°51'29.85"W	$25K	x		x		x			x
	27	Russian Orthodox Church	10	59° 6'25.94"N, 156°51'44.80"W	$25K	x		x		x			x
	1	Cemetery	N/A	59° 6'26.62"N, 156°51'51.58"W	--								

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

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Community (Continued)	8	Fish Plant	N/A	59° 6'36.38"N, 156°51'39.83"W	Unknown	x	x	x	x	x			x
	9	Community Greenhouse	1	59° 6'42.35"N, 156°51'29.89"W	Unknown	x		x		x		x	x
Utilities	21	AT&T Alascom	N/A	59° 6'44.43"N, 156°51'35.19"W	Unknown	x		x		x			x
	20	Village Power Plant	1	59° 6'47.25"N, 156°51'30.87"W	$400K	x		x		x	x	x	x
	2	Landfill	1	59° 6'41.03"N, 156°52'59.64"W	$1M					x			
	32	Overhead Power Lines	N/A	Community Wide	Unknown	x		x		x			x
	6	Bulk Fuel Tank Farm	1	59° 6'46.16"N, 156°51'28.75"W	Unknown	x		x		x			x

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

Facility Type	Facility Number (See Fig. 1 & 2)	Facility Name	Number of Occupants	Location (Latitude, Longitude)	Estimated Value	Hazard Impacts							
						Earthquake	Erosion	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire
Utilities (Continued)	11	GCI Tower	N/A	59° 6'25.63"N, 156°52'16.83"W	Unknown	x		x		x			x
	12	GCI Station	N/A	59° 6'25.71"N, 156°52'14.86"W	Unknown	x		x		x			x
	30	BBTC Cell Tower	N/A	59° 6'37.36"N, 156°52'0.38"W	Unknown	x		x		x			x
Natural Environment	10	Subsistence Sites	N/A	Community Wide	--							x	x
	29	Borrow Pit	N/A	59° 6'28.70"N, 156°52'23.49"W	--								x

5.4 VULNERABILITY

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

- Earthquakes – Seismic activity could disrupt power and communications, damage fuel tanks, and effect transportation, and the airport. Older structures are also at risk of damage.
- Erosion – Continuous erosion along the Kvichak River threatens the Community. The bulkhead pilings are becoming exposed and damaged, and other infrastructure is being undermined. Property owners are losing land are being forced to relocate homes. Other critical facilities are being threatened such as the school, church, and cemetery.
- Extreme Cold – Extreme cold causes pipes to burst, affects vehicle use, and restricts plane access. Extreme Cold has also caused frostbite to residents and hunters in the past.
- Flood – Homes and roads in low lying areas are affected along the shore of the Kvichak River. Severe storms with storm surges occur yearly.
- Severe Wind –Severe wind speeds have an impact on the delivery of supplies and air transportation. Dust clouds are also a major problem on dry windy days.
- Severe Winter Weather – The delivery of supplies is hindered via air transportation due to snow and ice on the runway. Residents can become lost while traveling between communities on trails during severe winter weather events.
- Volcano – Air quality decreases in the presence of ash and is detrimental to the health of residents and pets. The corrosive properties of the ash are harmful to equipment. Air transportation has stopped due to ash emissions from a volcanic eruption.
- Wildfire – 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	2010, 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	• 2000 Levelock Strategic Plan • Levelock Watershed Community Planning Project Final Summary Report (2005)
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	Yes	School
Village Public Safety Officer	No	--
Health Aide	Yes	Bristol Bay Area Health Corporation (BBAHC)
Planner or engineer with knowledge of land development and land management practices	No	The Tribe hires consultants with this knowledge
Engineer or professional trained in construction practices related to buildings and / or infrastructure	No	The Tribe hires consultants with this knowledge
Planner or engineer with an understanding of natural and / or human-caused hazards	No	The Tribe hires consultants with this knowledge
Surveyors	No	The Tribe hires consultants with this knowledge

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

Staff / Personnel Resources	(Yes / No)	Department / Agency and Position
Floodplain Manager	No	--
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 and/or HAZUS	No	The Tribe hires consultants with this knowledge
Finance (Grant Writers)	Yes	Tribe, City of Levelock (City), BBNA[1] (Situation Dependent)

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

6.2 FUNDING

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

6.2.1 Existing Funding Sources

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

6.2.2 Potential Funding Sources

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

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

6.2.2.1 Federal Funds

FEMA provides funding for eligible mitigation planning and projects that protect life and property from future disaster damages and reduces disaster losses. This funding is administered through three programs, the PDM, the Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance (FMA) Program. Below is a brief description of each of these funding sources.

Pre-Disaster Mitigation (PDM) Program

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

Hazard Mitigation Grant Program (HMGP)

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

Flood Mitigation Assistance (FMA) Program

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

6.2.2.2 Tribal Funds

Tribal funds are available to the Community. One of the Tribal funds available is the Indian General Assistance Program (IGAP). The IGAP provides funding sources to help manage and maintain an envir 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	Prevent damage to structures and infrastructure.
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 **extreme cold conditions**.
7	Reduce the possibility of damages due to **floods**.
8	Reduce the possibility of damages due to **severe wind**.
9	Reduce the possibility of damages due to **severe winter weather**.
10	Reduce the possibility of damages due to **volcanos**.
11	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.

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Table 6-4: Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
1.B	Finish the Emergency Plan, and educate community residents about the plan.	High	Council	Council	Council & Bureau of Indian Affairs (BIA)	1 Year
1.E	Upgrade the power system for the Community.	Medium	Levelock Electric	Levelock Electric Manager	Alaska Energy Authority (AEA)	2-3 Years
1.F	Identify and improve the airport.	Medium	Council	Council	Alaska Department of Transportation and Public Facilities (DOT&PF)	5 Years
2.A	Protect important structures from erosion.	Low	Council	Council	Unknown	3 Years
3.C	Incorporate drainage improvements and dust control in LRTP.	Low	Roads Planner	Roads Planner	BIA	3 Years
3.D	Develop an agreement with Naknek and Igiugig in case of emergency for emergency evacuation help / site.	Medium	Council	Council	Lake & Peninsula Borough	5 Years
4.A	Educate the Community about what to do during an earthquake and what to check after an earthquake.	Medium	Council	Council	Council	3-4 Years
4.C	Identify a muster point for the Community, and instruct the Community where the muster point is for the Community.	Medium	Council	Council	Lake & Peninsula Borough	5 Years

Table 6-4 (Continued): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
5.B	Repair the bulkhead and identify a strategy to protect from further erosion damage.	Low	Council	Council	Lake & Peninsula Borough	6 Years
6.B	Identify and acquire appropriate communication devices for the Community for safety purposes (e.g., hand held VHF radios and/or GPS).	Medium	Council and Clinic	Council and Clinic	Unknown	3 Years
6.G	Educate residents through the Levelock Bulletin about cold weather precautions and ways to protect themselves from extreme cold temperatures.	High	Council	Council	Council	1-2 Years
7.A	Improve drainage systems and increase drainage capacity throughout the Community	Medium	Council	Road Planner	FEMA/TTP/CDBG	3-4 Years
8.A	Identify a desired dust control method, and apply.	Low	Roads Planner	Roads Planner	BIA	3 Years
8.D	Educate residents about securing loose items around the Community.	Low	Council	Council	Council	5 Years
9.D	Install more trail markers on trails. Update / replace reflective material on existing trail markers.	Low	Roads Planner	Roads Planner	BIA	3 Years

Table 6-4 (Continuted): Prioritized Mitigation Actions

[1]Action ID	Description	Priority (High, Medium, Low)	Coordinating Department	Implementation Department/Role	Potential Funding Source	Timeframe
9.F	Acquire a communication device and/or GPS tracker for search and rescue efforts during severe winter weather events and other emergencies.	Medium	Council and Clinic	Council and Clinic	State	3 Years
10.G	Educate residents of the impacts of volcanic ash, and ways to protect themselves and equipment from those impacts.	Low	Council	Council	Council	5 Years
11.B	Update the fire truck.	Medium	Council	Council	Lake & Peninsula Borough	3 Years
11.H	Acquire fire extinguishers for community residents and educate on proper usage techniques.	Medium	Council	Council	Council	1 Year

[1] Action ID's 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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FIGURES

Community Map
LEVELOCK

59° 06' 40" N 156° 51' 30" W (NAD 83)
Approximate Elevation: 17'
Township 12 South, Range 45 West, S.M., AK
U.S.G.S. Quadrangle "DILLINGHAM A-2," Alaska
KVICHAK RECORDING DISTRICT

Magnetic North 17 3/4° E
True North

ASSET KEY:
1. CEMETERY
3. TRIBALLY OWNED EQUIPMENT
4. CLINIC
5. AIRPORT
6. BULK FUEL TANK FARM
8. FISH PLANT
9. COMMUNITY GREENHOUSE
10. SUBSISTENCE SITES *
11. GCI TOWER
12. GCI FACILITY
13. GAS STATION
14. BOAT STORAGE
15. STORE
16. SCHOOL
17. VILLAGE COUNCIL OFFICE
18. SCHOOL DIESEL STORAGE TANK
19. SCHOOL GENERATOR BUILDING
20. VILLAGE POWER PLANT
21. AT&T FACILITY
22. RAINBOW HALL RECREATION CENTER
23. L.N.L. STORAGE
24. L.N.L. OFFICE
25. VILLAGE COUNCIL STORAGE
26. BAPTIST CHURCH
27. RUSSIAN ORTHODOX CHURCH
28. POST OFFICE
29. BORROW PIT
30. BBTC CELL TOWER
31. ROADS *
32. UTILITIES LINES *
33. KVICAHK RIVER
34. L.N.L. RENTAL 1 (BEACH HOUSE)
35. L.N.L. RENTAL 2 (HUD HOUSE)
36. TRAILS *

* NOT SHOWN FOR CLARITY

KVICHAK RIVER

LEGEND

EROSION
FLOODING

0 200 400 600
SCALE IN FEET

FIGURE 1 of 2

0 2640 5280
SCALE IN FEET

FIGURE1

AREA MAP INSET 1"=2640'

MAP NOTES

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

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

ANCSA 14(c) survey not recorded at the time this map was done.

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

This map is based on photography acquired on June 17, 2002, at a nominal scale, of 1 in = 800 ft. AeroMap U.S. prepared the orthophoto and topographic mapping. The orthophoto is an aerial photo which has been corrected, by rectification to ground control stations, to remove distortions and warpage due to ground topography and aircraft tilt and trim.

HORIZONTAL AND VERTICAL CONTROL
The control monument for the digital orthophoto was U.S.C.G. LEVELOCK 1946. Published horizontal datum NAD 1983 coordinates for this monument are North 59° 06' 37.491612" and West 156° 52' 13.04542". The vertical datum NGVD 1929 for this monument is 80 feet above mean high water (MHW).

The contours were prepared at two (2) foot contour intervals with index contours every ten (10) feet.

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

ASSET KEY:
2. LANDFILL
5. AIRPORT
7. BARGE LANDING
10. SUBSISTENCE SITES *
31. ROADS *
32. UTILITIES LINES *
33. KVICAHK RIVER
36. TRAILS *

* NOT SHOWN FOR CLARITY

AREA USE MAP
LEVELOCK

59° 06' 40" N 156° 51' 30" W (NAD 83)
Approximate Elevation: 17'
Township 12 South, Range 45 West, S.M., AK
U.S.G.S. Quadrangle "DILLINGHAM A-2," Alaska
KVICHAK RECORDING DISTRICT

LEGEND

EROSION
FLOODING

0 500 1000 1500
SCALE IN FEET

Date of Photography: June 17, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

FIGURE 2 of 2

LEVELOCK AREA USE MAP SHEET 2 1"=500' (2002 PHOTOGRAPHY)

APPENDIX A

Planning Process

- Meeting Minutes (November 28, 2018)
- Planning Meeting Sign In Sheet (November 28, 2018)
- Planning Meeting Agenda (November 28, 2018)
- Hazard Identification Worksheet
- Risk Analysis Worksheet
- Vulnerability Statements
- Mitigation Goals
- Mitigation Action Types & Examples
- Mitigation Strategies
- Map Mark Ups
- News Articles Regarding August 2019 Wildfire
- Potential Mitigation Actions
- Mitigation Action Evaluation Worksheet

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MEETING MINUTES

Project: **BBNA THMP & TTSP Project**
Bristol Project No: 32190013
Reference: Levelock Planning Team Meeting
Date of Meeting: November 28, 2018, 9:00 AM – 12:15 PM
Location of Meeting: Bristol Large Conference Room
Participants: Sam Wassillie – Point of contact for FEMA Plans
Bristol: Danielle Dance, Jackie Wander, Taylor Turney
BBNA: Annie Fritze
Planning Team: See attached sign in sheet

Summary

Jackie, Danielle, and Taylor with Bristol hosted a planning team meeting with Levelock Council members in the Large Conference Room of the Bristol Bay Building. The Council will be collecting more community surveys to get information and background data for the plans, and Bristol will bring extra copies out for the public meeting in January. During the meeting, hazards, assets, vulnerability statements, mitigation goals, and mitigation strategies were discussed. Notes taken throughout the meeting are summarized below.

THMP Planning Team Meeting Notes

Worksheet #1 – Hazard Identification

- Avalanche
  - No risk, not applicable to the area
  - DO NOT PROFILE
- Drought
  - Warm summers but rarely affected by drought
  - Plenty of moisture and running water in river
  - Very rainy and green in the summer
  - DO NOT PROFILE
- Earthquake
  - Most earthquakes have occurred at night
  - Have not been noticed even when documented to have occurred
  - Little to no known damage from earthquakes
  - 1964 Earthquake – stories of ice rippling on frozen river while ice fishing, people had to scramble away for safety
  - Tsunamis might be a risk
  - The silt/sand subsurface may be why they never feel the shaking
  - PROFILE
- Erosion
  - Raymond mentioned having to move his house already
  - Approximated erosion of 2-3 feet per year on Kvichak River

  - Off the end of airport, culverts at river crossing two 3ft culverts, one 2ft culvert. Flooding occurs in spring and during heavy rain. Indicates that culverts lack sufficient capacity, they have to add fill every year to remediate erosion. Fine backfill on the road gets washed away every year. This road is used for hunting.
  - Pilings are becoming exposed above the bulkhead at the barge landing near the fuel header
  - Have lost hundreds of feet to erosion, but will not be deemed critical unless public facilities are at risk
  - Close to church, graveyard, school, header for fuel lines
  - Septic tank pipes exposed from bank, well casings are left on the beach
  - Wind and large tides cause most of the undercutting, ice may contribute
  - Raymond is working with BBNA to monitor river erosion
  - PROFILE
- Extreme Cold
  - Mentioned 20 year cycle of cold cycles
  - School pipes bursting, have to wait until after cold snap abated to fix and until planes could fly in new parts
  - Not able to start vehicles, or take a while to get warm
  - Planes won't fly below -30degF, plane service down for as long as a week, turbines work colder than aspirated engines, community relies on air service for everything
  - Most extreme -50degF and 50mph high winds
  - Haven't experienced the extreme cases since the 1990's
  - PROFILE
- Extreme Heat
  - A few really warm days, but not many
  - Not a duration of any concern
  - DO NOT PROFILE
- Flood
  - During tide surges and high wind, water can get within 300 feet of homes
  - Flooding/standing water occurs on Main Street at 4th Street below the village council building due to poor drainage
  - Near Raymond's house, they made some changes for the fish processing plant that could cause more flooding (elevated pad, reduced vegetation)
  - Have never seen homes flooded
  - Occurs every spring
  - Noticed on most roads and along the beach
  - PROFILE
- Landslide
  - No risk, not applicable to the area
  - DO NOT PROFILE
- Severe Wind
  - Siding and roofing can fly off of buildings
  - Can cause delayed or canceled air traffic, sometimes planes won't land without a cross strip runway
  - Have been without service for 3-4 days

  - Grant Air is in charge of mail and frequently experience delays from wind
  - Wind causes more wave action increasing erosion
  - Moves sand and increases airborne dust content, dust clouds are visible from planes flying out of Iliamna
  - Seasonal high winds in the fall, infrequently in winter, spring, summer
  - Wind speed as high as 60mph
  - PROFILE
- Severe Winter Weather
  - Runway clearing was an important job in the past, taking several hours every day, operators had to get up at 5 in the morning to plow
  - People walk during snowy weather, but are encouraged to stay home
  - Able to clear roads with community equipment
  - Have experienced less snow in recent years
  - Freezing rain has caused slick conditions that planes wouldn't land on, one pilot landed on an icy runway and tried to stop too quickly causing popped tires
  - Have experienced whiteout conditions that caused hunters to be lost, requiring search and rescue, people made a poor decision to travel
  - Existing markers between Levelock and New Stuyahok but they are hard to see in inclement conditions
  - People have experienced frostbite (fingers and toes) and hypothermia traveling to nearby communities such as Naknek
  - PROFILE
- Subsidence
  - Occurs infrequently with new construction, it depends on the quality of the construction, if the gravel pad/foundation is not built properly then the effects are noticeable within a year or two, but is fine after some maintenance
  - Minor effects, not concerned
  - DO NOT PROFILE
- Tsunami
  - No known occurrences
  - DO NOT PROFILE
- Volcanos
  - Katmai, Iliamna, Aniakchak, Redoubt volcanoes mentioned
  - No known occurrences of ash fall in Levelock, it could happen if the winds blew in the right direction
  - Can stop air traffic coming in to Levelock from affected areas
  - Mount Redoubt affected air service a while back out of Port Alsworth
  - PROFILE
- Wildfire
  - Three nearby wildfires within the last 5 years not far from Levelock – Branch River, West side – across from Naknek, New Stuyahok, even had smoke from McGrath, caused by lightning
  - Have had light smoke in Levelock from neighboring wildfires, could last for weeks
  - One firetruck is available, has been damaged due to freezing pipes, needs upgrades

  - Code Red Connex with supplies, needs upgrades
  - Volunteer basis, no dedicated fire safety personnel
  - No known impact to subsistence areas
  - PROFILE

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

- Buildings / Infrastructure
  - LNL Storage – Across from old office, stores skiff and parts, 2 tin buildings and a green hangar
  - LNL Rentals (2), separate locations Beach House and HUD House
  - Boat storage
  - GCI station
  - Community greenhouse owned by the Village
  - School diesel storage tanks (1)
  - Cemetery (1) – pink highlighter on map (see attached)
  - Barge landing
  - Fish plant (seasonal, under construction, not currently in use, might have up to 60 occupants in the future)
  - GCI Tower and a separate station (building with satellite)
  - Gas station
  - Tank farm (bulk fuel storage) for power plant and community heating oil
  - BBTC Cell Tower (Bristol Bay Telephone Corporation)
  - Everyone has individual wells and septic systems, no community utilities
  - Rec. Center sometimes accommodates entire community, 60-70 people at a time
- Equipment
  - Backup generator for school
  - Loader, grader, D5 dozer, case 850 dozer, case 750 dozer, forklift, crane, dump truck (2), VPSO skiff, VPSO SUV, VPSO ATV
- Natural
  - Trails
  - Subsistence sites
  - Borrow site - sand

Worksheet #4 – Vulnerability (Problem) Statements

- These statements explain why the specified hazards should be profiled
- Bristol will use statements that were developed in the past by Levelock Council members, and will develop additional statements, to be reviewed by the Council in the Draft report

Worksheet #5 – Mitigation Goals

- Broad statements of what the community wants to see happen for each of the specified hazards
- Build capacity of tribe to prepare, respond, and recover from disasters
- Understand what other communities do for planning to respond to disasters
- Prevent damage to structures and infrastructure due to erosion

Worksheet #6 – Mitigation Strategies

- What can be done about the specified hazards and goals?
- See attached Worksheet #6 for more information
- Earthquake
    - Inspection list for after an Earthquake event
    - Community awareness on safety actions during earthquake
    - Evacuation point for emergencies, the biggest hill is about 5 miles inland (a long way to travel), there is an existing road but this location could be identified and described to community members
    - Identify safety personnel to check around after events
- Erosion
    - Sea Wall – Cost prohibitive, possibly protect only public structures, much of the erosion area is on private land, people have tried planting trees in the past, even placing old vehicles to try to stop the erosion
    - Relocation of affected structures, fix bulkhead
    - Improving drainage throughout village
    - Bank is getting close to school (teacher housing), church, cemetery, Beach House
- Extreme Cold
    - Maintain volunteer team / search and rescue individuals
    - Handheld radios, GPS, emergency supplies
    - Awareness to check boilers, having extra wood, extra heat source for residential
    - Education about risks of frostbite, hypothermia
    - Some people have wood stoves, but a lot of people do not have backup heat, in the past this was required but it is not enforced anymore, should encourage again in case of a power outage
    - Education to check heating oil, boilers
- Flood
    - Improve drainage, larger culverts for spring flooding near airport and council building
    - Continued maintenance of existing culverts
    - Remediation of sediment transport blocking ditches
    - Large runoff flows through yards
    - When it floods, sand from the roads flows with the water and deposits in the drainage ditches, however they cannot remove the sand/clean the ditches because it took 3 years to establish good turf in the drainage ditches and they do not want to disturb the root base, need a better system
- Severe wind
    - Dust control
    - New runway for crosswind landing
    - Airport expansion (5,000 ft) for fish plant and to fix the issues at the creek
    - Levelock Facebook page could be used for public announcements / education
    - Education to secure loose property, especially debris at the Fish Plant
    - Maintenance on overhead power lines, identify additional power plant operators, power plant needs upgrades, power outages occur regularly
- Severe Winter Weather
    - Ice cleats provided to residents through village council

    - State contracts someone locally to plow runway
    - Continued snow plowing for roads and airport
    - More trail markers with reflective material, markers placed closer together, or lighted beacons
    - Contact BBNA for weatherization improvements, the Rec. Hall and many homes never had completed weatherization
    - Handheld radios and GPS devices
    - Suggest Spot app for residents to use for safety location, tracking
- Volcanos
    - Reserve supplies, masks at clinic, supply of air filters for power plant, checklist for power plant inspection
    - Tarps for equipment protection during ash fall
    - New storage/mechanical building for equipment
- Wildfire
    - PRIORITY: Fire extinguishers for community and homes (most have been used)
    - PRIORITY: Updated fire truck
    - Masks at clinic
    - Updated Code Red connex
    - Identify Volunteer Fire Chief
    - Warm Storage for firetruck to prevent future freezing / leaks
    - Training for Code Red personnel
    - Look into FireWise participation, brush clearing awareness and equipment
    - Have had home fires in the past, but none of the buildings have extinguishers
    - Council tries to brush cut every year, could be a part of FireWise
- Goal: Prevent Damages to existing infrastructure – Upgrade power system to prevent power outages, backup clinic generator, finish emergency plan, educate community about plan
- Goal: Prepare for - finish emergency plan, educate community about plan
- Goal: promote cross-referencing
    - Work with neighboring communities (closest by water are Igiugig & Naknek, closest by land are Ekwok and New Stuyahok, only accessible in winter)

*See mitigation action worksheet for goal details
*Public meeting and Safety Plan meeting date will be set for a Thursday in late January.

Attachments:

1. Planning Team Meeting Sign-in Sheet
2. Planning Team Meeting Agenda
3. Worksheet #1: Hazard Identification
4. Worksheet #3: Risk Analysis
5. Worksheet #4: Vulnerability Statements
6. Worksheet #5: Mitigation Goals
7. Worksheet #6: Mitigation Strategies
8. Map Markups

End Meeting Minutes
CC: File

Planning Team Meeting

Levelock Tribal Hazard Mitigation Plan (2019 - 2024)

Date / Location: November 28 , 2018, Bristol Large Conference Room

Sign In Sheet

Name	Phone	Email
Raymond Apokedak (Vice President)	907-287-6069	rapokedak@hotmail.com
Sam Wassillie (administrator / PC Rep)	907 287-6201	levelockadmin@bbna.com
Reg Andrew Jr (Safety PC)	287-6200	KIIplanner@gmail.com
Shirley Andrew	287-6102	shirley-andrew@hotmail.com

LEVELOCK
November 28, 2018

HAZARD MITIGATION PLAN & TRANSPORTATION SAFETY PLAN

WORKSHOP AGENDA

Hazard Mitigation Plan

9:00 AM	Introductions Project Background & Schedule Community Surveys
9:15 AM	Worksheet 1 – Hazard Identification
10:15 AM	**BREAK**
10:30 AM	Worksheet 3 – Risk Analysis
11:00 AM	Worksheet 4 – Vulnerability Statements Worksheet 5 – Mitigation Goals
11:15 AM	Worksheet 6 – Mitigation Action Plan
12:00 PM	Closing Statements & Action Items

Remaining Items to be Accomplished During Site Visit:

- Transportation Safety Plan
  - Determine Emphasis Areas
  - Implementation Plan
- Public Meeting for both Plans

WORKSHEET #1: HAZARD IDENTIFICATION

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

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

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

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

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

SELECT HAZARD DEFINITIONS

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

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

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

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

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

INSTRUCTIONS FOR WORKSHEET #1

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

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

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

Table 1: Location (Geographic Area Affected)

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

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

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

Table 2: Maximum Probable Extent (Magnitude/Strength)

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

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

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

Table 3: Probability of Future Events

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

4. Overall Significance – *[Column D]*

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

Table 4: Overall Significance

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

5. Profile (Yes OR No) – *[Column E]*

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

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	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire				
Andrew's Provisions (Store)	4			x											
Student Store (School)	N/A														
Village Council Office	10														
School	25														
School Diesel Storage Tanks	N/A														
School Generator Building	N/A														
Village Power Plant	1														
AT&T Alascom	N/A														
Rainbow Hall Rec. Center	70														
L.N.L Storage	N/A														
L.N.L Office	1														
L.N.L Rentals 1 (Beach House)	N/A														
L.N.L Rental 2 (HUD House)	N/A														
Village Council Storage	N/A														
Baptist Church	10														
Russian Orthodox Church	10														
Post Office	1														

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	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire				
Cemetery	N/A														
Landfill	1														
Overhead Power Lines	N/A														
Tribally Owned Equipment	N/A														
Clinic	3														
Airport	N/A														
Roads	N/A														
Bulk Fuel Tank Farm	1														
Trails	N/A														
Barge Landing	N/A														
Fish Plant	N/A														
Community Greenhouse	1														
Subsistence Sites	N/A														
GCI Tower	N/A														
GCI Station	N/A														
Gas Station	1														
Boat Storage	N/A														

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	Extreme Cold	Flood	Severe Wind	Severe Winter Weather	Volcano	Wildfire				
Borrow Pit	N/A														
BBTC Cell Tower	N/A														

Tribe: Lovelock

Hazard: Wild Fire

Knowledge of A past wild fire in 1926 was past down by elders. Wild fire is always a threat due to human activity and thunderstorms.

Hazard: Structure Fire

Lost 15 homes and couple of steam baths have burned at different times, but there is a pattern of fires that threaten the village. There are abandoned buildings that increase the threat

~~The~~ the Post Master lost her life in one of the last house fires

Tribe: Levelock

Hazard: Flooding

Since we are on the river, we are exposed to Severe storms with storm surges that flood the low lying areas. Homes and roads are affected along the shoreline.

Hazard: Economic

Levelock's economy is heavily dependent on commercial fishing. The Tribe is building a fish processing plant to create jobs and another source of income. The project brings people back to the community. In the event of a fishing disaster Levelock will be in an economic disaster.

Tribe: Levelock

Hazard: Dust

On dry, windy days ~~the~~ dust is blown around and Levelock is visible from miles around by the dust cloud.

Hazard: Earthquake

Levelock is in danger of an earthquake that knocks out the power, ~~fuel~~ fuel tanks, transportation, airport, and communications. The soil is sand, which is not stable in an earthquake.

Hazard: Volcano

When a volcano erupts it affects air travel and we are stuck and unable to replenish supplies

Tribe: Levelock

Hazard: Erosion

past experiences
why you think it is a hazard to profile?

Beach erosion is ongoing and particularly bad during storms. Erosion affects the whole community and/thru access to/from the river. The boat landing area erodes and gets pushed up onto adjacent property. Property owners are losing their land to erosion and homes are being moved as a result. Threatened facilities include school, church, fish plant, cemetary

WORKSHEET #5: MITIGATION GOALS

Mitigation goals are general guidelines that explain what the community wants to achieve with the Tribal Hazard Mitigation Plan. They are broad policy-type statements that are long-term, and represent the vision for reducing or avoiding losses from the identified hazards.

The following are a few examples of mitigation goals.

- Promote development that is disaster-resistant.
- Build capacity of the Tribe to prepare, respond to, and recover from disasters.
- Reduce possibility of damages from [disaster].
- Promote recognition and mitigation of all natural hazards that affect the Community.
- Prevent damage to structures and infrastructure.
- Promote cross-referencing of mitigation goals and actions with other Tribal planning mechanisms and projects.

Using the previously created vulnerability statements as a guide, and the provided examples, create the Community Tribal Hazard Mitigation Plan (THMP) Mitigation Goals.

Mitigation Goals:

**Note: You many have more or less than 15 statements.*

1.) Reduce the possibility of damages due to earthquakes.

2.) Reduce the possibility of damages due to erosion.

3.) Reduce the possibility of damages due to extreme cold conditions.

4.) Reduce the possibility of damages due to floods.

5.) Reduce the possibility of damages due to severe wind.

6.) Reduce the possibility of damages due to severe winter weather.

7.) Reduce the possibility of damages due to volcanos.

8.) Reduce the possibility of damages due to wildfires.

9.) Build the capacity of the Tribe to prepare, respond to, and recover from disasters.

10.) Prevent damage to structures and infrastructure.

11.) Promote cross-referencing of mitigation goals and actions with other Tribal planning mechanisms and projects.

12.)

13.)

MITIGATION ACTION TYPES AND EXAMPLES

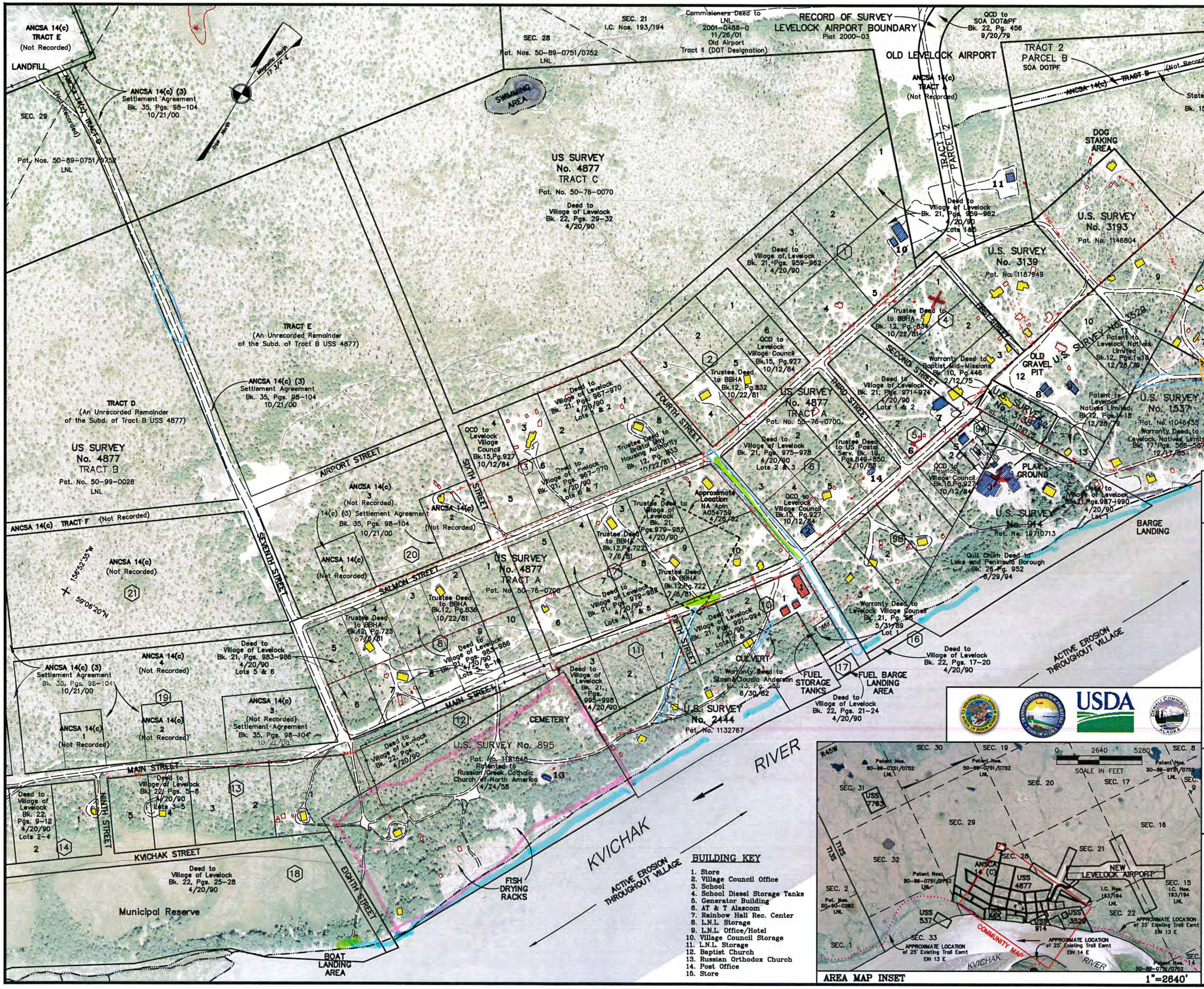
Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built	• Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes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

Worksheet #6 Mitigation Actions

GOALS		ACTIONS	
Column A1	Column A2	Column B1	Column B2
No.	Goal	ID	Description
	Earthquake		Educate about things to check after an earthquake, Educate about what to do during an earthquake, Identify muster point, educate about where to go, identify safety people that go and check on people to make sure they are ok, evacuation road
	Erosion		seawall, fix bulkhead, bigger culverts, improve drainage in community, protect cemetery and church, school
	Extreme Cold		Maintain a team of search and rescue volunteers, hand held VHF radios, hand held GPS, blankets, MRE's, Educate people about items to bring when traveling, back up heat source for residents, check heating oil, boilers
	Flood		improve drainage in community, bigger culverts by council building and airport, continued maintenance of existing culverts
	Severe Wind		dust control, cross wind runway, extra provisions, secure items outside, maintenance on power lines, identify additional power plant operators, training for operators,
	Severe Winter Weather		ice cleats provided to residents by council, winterization checklist, continued snow plowing for roads and airport, more trail markers, update/replace reflective material on trail markers, work with BBNA on weatherization, educational GPS and handheld VHF radio, GPS Tracker,
	Volcanos		reserve supplies, masks at clinic, supply of air filters at power plant, inspection checklist for generators, new storage / maintenance building, supply of tarps to cover equipment

Worksheet #6 Mitigation Actions

GOALS		ACTIONS	
Column A1	Column A2	Column B1	Column B2
No.	**Goal**	**ID**	**Description**
	Wildfire		masks at clinic, updated fire truck , updated code red connex, new warm storage building for fire truck, updated training for fire personnel, participate in Firewise, acquire chainsaw and equipment, fire extinguishers for community, brush clearing, educate about perimeter around homes,
	Build capacity of the Tribe to prepare, respond to, and recover from disasters.		back up generator for clinic, upgrade power system, finish emergency plan, educate community about the plan, post important contact numbers around community,
	Prevent damage to structures and infrastructure.		protect structures from erosion, firewise, improve drainage
	Promote cross-referencing of mitigation goals and actions with other Tribal planning mechanisms and projects.		identify evacuation road in safety plan, incorporate needed safety equipment in safety plan, incorporate drainage improvements and dust control in LRTP, work with Naknek and Igiugig in case of emergency or evacuation help / site



MAP NOTES

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

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

ANCSA 14(c) survey not recorded at the time this map was done.

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

This map is based on photography acquired on June 17, 2002, at a nominal scale, of 1 in = 800 ft. AeroMap U.S. prepared the orthophoto and topographic mapping. The orthophoto is an aerial photo which has been corrected, by rectification to ground control stations, to remove distortions and warpage due to ground topography and aircraft tilt and trim.

HORIZONTAL AND VERTICAL CONTROL
The control monument for the digital orthophoto was U.S.C.G. LEVELOCK 1946. Published horizontal datum NAD 1983 coordinates for this monument are North 59° 06' 37.491612" and West 156° 52' 13.04542". The vertical datum NGVD 1929 for this monument is 80 feet above mean high water (MHW).

The contours were prepared at two (2) foot contour intervals with index contours every ten (10) feet.

Community Map
LEVELOCK

59° 06' 40" N 156° 51' 30" W (NAD 83)
Approximate Elevation: 17'
Township 12 South, Range 45 West, S.M., AK
U.S.G.S. Quadrangle "DILLINGHAM A-2," Alaska
KVICHAK RECORDING DISTRICT

LEGEND

- Residential Building
- Commercial Building
- Public Building
- Edge of Water
- Electric Line w/pole
- Telephone Line
- Drainage Problem
- Periodic Flooding

0 200 400 600
SCALE IN FEET

SCALE: 1"=200'
Date of Photography: June 17, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

SHEET 1 of 2

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

x 2 stores
- cemetery
- erosion
- flooding/poordrainage

SEC. 30
Patent Nos. 50-89-0751/0752
SEC. 20
SEC. 17
Patent Nos. 50-89-0751/0752
SEC. 9
Patent Nos. 50-89-0751/0752
DRY LAKE
Magnetic North 17 3/4° E
True North
FIRST CREEK
SEC. 29
SEC. 16
ANSCA 14 (c) TRACT E (Not Recorded)
LANDFILL
Patent Nos. 50-89-0751/0752
ANSCA 14 (c) TRACT D (Not Recorded)
SEC. 28
Commissioner's Deed To LNL 2001-000488-0 11/26/01 Old Airport Tract I (Dot Designations)
SEC. 21
I.C. Nos. 193/194
D.O.T. AIRPORT GRADER BUILDING
OLD LANDFILL
OLD LEVELOCK AIRPORT TRACT 1 PARCEL 1 Bk. 22 Pg. 456 B.B.R.D. 9/20/79
NEW LEVELOCK AIRPORT Record of Survey PARCEL 4 Plat 2000-03 L.N.L. Special Warranty Deed Bk. 32 Pg. 040 12/23/98
SEC. 32
SEC. 28
Patent Nos. 50-89-0751/0752
TRACT D (An Unrecorded Reminder of the Subd. Of Tract B USS 4877)
TRACT E (An Unrecorded Reminder of the Subd. Of Tract B USS 4877)
SWIMMING AREA
ANSCA 14 (c) TRACT A (Not Recorded)
US SURVEY No. 4877 TRACT C Pat. No. 50-89-0751
US SURVEY No. 4877 TRACT 1 PARCEL II New Airport Access Road Record Of Survey Plat 2000-03 Bk. 22, Pg. 456 B.B.R.D. 9/20/79
CULVERT
NEW LEVELOCK AIRPORT Record of Survey PARCEL 3 Plat 2000-03 Corrective Corp Spec. Warr. Deed Bk. 33 Pg. 313
OLD LEVELOCK AIRPORT TRACT 1
I.C. Nos. 193/194
SECOND CREEK
US SURVEY No. 4877 (Blocks 19, 20, 21 & 22 Surveyed as part of ANSCA 14 (c) Settlement)
OLD LANDFILL
OLD BURIAL SITE
SEC. 33
Municipal Reserve
ANSCA 14(c) TRACT C
CREEK
LEVELOCK AIRPORT TRACT 2 PARCEL A
State in Trust, DCED 60' ROW Esmt. to DOT Bk. 15 Pgs. 928-933 10/12/84 Parcel A & B of Tract 2 (Dot Designation)
SEC. 15
APPROXIMATE LOCATION of 25' Existing Trail Esmt EIN 13 E
USS No. 3138 Pat. No. 1187949
USS No. 3193 Pat. No. 1146804
ANSCA 14(c) TRACT B
US SURVEY No. 4877 TRACT A Pat. No. 50-78-0700
CEMETERY
USS No. 895 Pat. No. 1181648
No. 537 Pat. No. 1222
USS No. 2444 Pat. No. 1132787
USS No. 814 Pat. No. AA17979
USS No. 1537 Pat. No. 1048359
USS No. 3529 Pat. No. 1217371
I.C. Nos. 193/194
PUMP LAKE
LEVELOCK
SEC. 22
OLD LEVELOCK PACKING CANNERY
APPROXIMATE LOCATION of 25' Existing Trail Esmt EIN 13 E
KVICHAK
RIVER
APPROXIMATE LOCATION of 25' Existing Trail Esmt EIN 14 E

Legend & Notes

DRAINAGE PROBLEM

PERIODIC FLOODING AREAS

MAP NOTES

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

AREA USE MAP
LEVELOCK

59° 06' 40" N 156° 51' 30" W (NAD 83)
Approximate Elevation: 17'
Township 12 South, Range 45 West, S.M., AK
U.S.G.S. Quadrangle "DILLINGHAM A-2," Alaska
KVICHAK RECORDING DISTRICT

SEE SHEET 1 FOR DETAILED COMMUNITY MAP

0 500 1000 1500
SCALE IN FEET

SCALE: 1"=500'
Date of Photography: June 17, 2002
Magnetic Declination computed by U.S.G.S. Geomag Program using AK-2000.COF model as of August 1, 2002.

LEVELOCK AREA USE MAP SHEET 2 1"=500' (2002 PHOTOGRAPHY)

(2) 3' culverts & (1) 2' culvert

ANCHORAGE DAILY NEWS

Rural Alaska

Residents evacuate as wildfire approaches village in Southwest Alaska

Author: **Alex DeMarban** Updated: 17 hours ago Published 18 hours ago

Dozens of residents from a Southwest Alaska village safely evacuated to other communities Monday as a wildfire threatened to barrel into the village, officials said.

The fire near the community of Levelock, population 80, was reported around 1 a.m. Monday morning, said Beth Ipsen, with the Alaska Interagency Fire Information office.

A team of eight smokejumpers were sent in after daybreak Monday to help prevent the fire from reaching the village, she said. Some villagers had also stayed to fight the fire, using bulldozers to carve a fire break around part of the village.

Ipsen said Monday she did not yet know the size of the fire or its exact location. She understood it was moving past the village's western side.

"It doesn't sound like it reached any structures," she said. "We're waiting to hear from the smokejumpers on the ground."

Levelock is located in the Bristol Bay region, about 60 miles east of the hub city of Dillingham.

Villagers on Sunday night took to the water in skiffs for safety, as the fire moved toward the village, said Stan Swetzof, fire chief for the Bristol Bay Borough, which helped provide shelter.

Many of the residents were able to return to the village later and fly out by airplane to the nearby village of King Salmon, he said. Some went to other villages in the area.

About three dozen residents had arrived in King Salmon early Monday, said Becky Savo, a planner for the borough helping manage a shelter in that village.

"The people here had a lot of anxiety," she said. "They were worried, some elders had health problems."

Swetzof said as far as he knew no one was injured by the fire.

Ipsen said there are 64 active fires in the Southwest Alaska region, and 237 active fires statewide.

About this Author

Alex DeMarban

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments. Reach him at 907-257-4317 or alex@adn.com.

Comments

ANCHORAGE DAILY NEWS

Rural Alaska

Southwest Alaska wildfire grows to 5,000 acres; residents, smoke jumpers kept Levelock safe

Author: **Alex DeMarban** Updated: August 20 Published August 20

The fire near Levelock burns Aug. 18, 2019. (Photo by Alexander "Skipper" Tallekpalek)

Smoke jumpers and residents from a Bristol Bay village kept up their attack Tuesday against a wildland blaze that menaced the community for two days, threatening homes and forcing evacuations as it grew to an estimated 5,000 acres.

"No one in our community has experienced a fire like this before," said Alexander "Skipper" Tallekpalek, tribal president in Levelock. "There were people that were scared of the smoke and fires."

The blaze somehow flared in the wilderness over the weekend, fueled by an unusually warm summer and windy days, he said. It started north of the village and moved along its western flank.

Light rains Monday and Tuesday helped stanch the fire.

“The fire danger is not as high now,” he said Tuesday by cellphone in Levelock. “I’d say it’s down to smoldering" and hot spots near the village.

The flames late Sunday forced many residents to temporarily take refuge in skiffs in the river, residents said.

Tallekpak and other village men stayed in Levelock on Monday to fight the fire. Many elders, children and some families boarded planes to take shelter in nearby communities, he said.

Levelock, population 80, is located 60 miles east of the hub city of Dillingham.

As flames raced over tundra and trees near the village, residents used bulldozers to scrape soil into protective berms. The village fire truck is old and doesn’t work, so they filled water tanks and pulled them behind a four-wheeler, dousing problem areas as flames encroached.

“The fire actually got about 200 yards” from some houses, he said.

The state delivered eight smoke jumpers Monday. They used a water pump and firefighting hoses, helping prevent damage to structures and people, Tallekpak said.

Beth Ipsen, with the Alaska Fire Service, said firefighters and village residents worked together to control two flare-ups of the Levelock fire, which had jumped the newly created fire breaks around the village.

By Tuesday, fire breaks had been created around much of the village, Tallekpak said.

The hot, dry conditions added to difficulty controlling the fire, Ipsen said. Smoke jumpers estimated the blaze at roughly 5,000 acres, she said.

Firefighters planned to conduct a burn operation Tuesday near the village to eliminate brush that could fuel the fire. Additional smoke jumpers are expected to be sent to the area, she said.

“They are being creative and working closely with the community,” she said.

About this Author

Alex DeMarban

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments. Reach him at 907-257-4317 or alex@adn.com.

Comments

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
1	Build capacity of the Tribe to prepare, respond to, and recover from disasters.	1.A	Acquire a back up generator for the clinic.
		1.B	Finish the Emergency Plan, and educate community residents about the plan.
		1.C	Post important contact numbers around the Community.
		1.E	Upgrade the power system for the Community.
		1.F	Identify and improve the airport.
2	Prevent damage to structures and infrastructure.	**2.A**	Protect important structures from erosion.
		2.B	Participate in Firewise.
		2.C	Improve drainage throughout the Community.
3	Promote cross-referencing of mitigation goals and actions with other Tribal planning mechanisms and projects.	3.A	Identify an evacuation road in the Safety Plan.
		3.B	Incorporate needed safety equipment in Safety Plan.
		3.C	Incorporate drainage improvements and dust control in LRTP.
		3.D	Develop an agreement with Naknek and Igiugig in case of emergency for emergency evacuation help / site.
4	Earthquake	**4.A**	Educate the Community about what to do during an earthquake and what to check after an earthquake.
		4.B	Design and construct an evacuation road.
		4.C	Identify a muster point for the Community, and instruct the Community where the muster point is for the Community.
		4.D	Identify individuals to check on residents to ensure they are safe.
5	Erosion	5.A	Build a seawall.
		5.B	Repair the bulkhead and identify a strategy to protect from further erosion damage.
		5.C	Improve drainage throughout the Community.
		5.D	Identify best solution to protect the cemetery and church, and put protection in place.
		5.E	Identify best solution to protect the school, and put protection in place.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
6	Extreme Cold	6.A	Maintain a team of search and rescue volunteers.
		6.B	Identify and acquire appropriate communication devices for the Community for safety purposes (e.g. hand held VHF radios and/or GPS).
		6.C	Acquire extra blankets and MRE's as back up supplies.
		6.D	Educate residents about important items to bring when traveling.
		6.E	Identify a back up heat source for residents.
		6.F	Develop a schedule to check heating oil and boilers.
		6.G	Educate residents through the Levelock Bulletin about cold weather precautions and ways to protect themselves from extreme cold temperatures.
7	Flood	**7.A**	Improve drainage systems and increase drainage capcity throughout the Community.
		7.B	Install larger culverts by council building and airport.
		7.C	Develop a schedule for continued maintenance of existing culverts.
8	Severe Wind	**8.A**	Identify a desired dust control method, and apply.
		8.B	Design and construct a cross wind runway.
		8.C	Acquire extra provisions for the Community.
		8.D	Educate residents about securing loose items around the Community.
		8.E	Maintain power lines.
		8.F	Identify additional power plant operators.
		8.G	Provide training for the power plant operators.

Potential Mitigation Actions

GOALS		ACTIONS	
No.	**Goal**	**ID**	**Description**
9	Severe Winter Weather	9.A	Provide residents with ice cleats.
		9.B	Develop a winterization checklist for residents, and distribute.
		9.C	Continue snow removal on the roads and airport.
		9.D	Install more trail markers on trails. Update / replace reflective material on existing trail markers.
		9.E	Work with BBNA on house weatherization for residents.
		9.F	Acquire a communication device and/or GPS tracker for search and rescue efforts during severe winter weather events and other emergencies.
10	Volcanos	10.A	Acquire reserve supplies for the Community.
		10.B	Ensure there is a supply of appropriate masks at the clinic for all residents in the Community.
		10.C	Acquire an extra set of air filters for the power plant for emergency purposes.
		10.D	Develop an inspection checklist for generators.
		10.E	Design and construct a new storage / maintenance building.
		10.F	Acquire a supply of tarps to cover equipment.
		10.G	Educate residents of the impacts of volcanic ash, and ways to protect themselves and equipment from those impacts.
11	Wildfire	11.A	Ensure there is a supply of appropriate masks at the clinic for all residents in the Community.
		11.B	Update the fire truck.
		11.C	Update the Code Red connex as needed.
		11.D	Design and Construct a new warm storage building for the fire truck.
		11.E	Update training for established fire personnel.
		11.F	Participate in Firewise.
		11.G	Acquire a chainsaw and equipment for fire related issues.
		11.H	Acquire fire extinguishers for community residents and educate on proper usage techniques.
		11.I	Perform brush clearing around the Community.
		11.J	Educate Community members about the need for fire barriers around their homes.

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

Mitigation Action Evaluation Worksheet (*Continued*)

Mitigation Action ID	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
10.G	1	1	1	0	1	0	1	1	0	0	6
11.B	1	1	1	1	1	1	1	1	1	1	10
11.H	1	1	0	0	0	1	1	1	1	1	7

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

APPENDIX B

Public Involvement

- Public Meeting Comments (January 24, 2019)
- 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
- Public Comment
- Letter to State Representative
- Letter to Senator

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TRIP REPORT & MEETING MINUTES

Project: **BBNA THMP & TTSP Project**
Bristol Project No: 32190013
Reference: Levelock Planning Team Meetings & Public Meetings
Date of Meeting: January 23-24, 2019
Location of Meeting: Rec Hall & Tribal Building
Participants:
Bristol: Danielle Dance, Jackie Wander
Planning Team: See attached sign in sheet
Public Meeting: See attached sign in sheet

Summary

Jackie and Danielle arrived in Levelock via Dena'ina Air Taxi around 2:30 PM on Wednesday January 23, 2019. They met with Council members in the Tribal Building to discuss the Tribal Transportation Safety Plan (TTSP) from 3:00 to 4:30 PM, discussing emphasis areas and potential safety strategies to include in the plan.

The public meeting was originally scheduled for 5:00 PM that evening, but there was a Corporation meeting at the same time, so few people attended the public meeting. The Council agreed to reschedule the public meeting for the next morning at 9:00 AM (Rec Hall) and make a Facebook post about the change. Both the TTSP and Tribal Hazard Mitigation Plan (THMP) were discussed to collect public comment. Surveys were distributed as well. The meeting concluded around 10:30 AM. Jackie and Danielle departed Levelock around 11:00 AM on Thursday, January 24.

Notes taken during the meetings are summarized below. Items marked with (*) need more research or assistance.

TTSP Planning Team Meeting Notes

- The Village is in need of new/updated equipment; BIA said they can spend maintenance money on equipment in a few years; they need a new grader, loader, and a bigger dump truck (their current dump truck is only 2-wheel drive)
- Levelock Natives Limited (LNL) has a gravel pit up the river about 15 miles; The village has been trying to develop an MOU and get permitting to access the gravel; would like to work with LNL in the future
- The Council has talked about getting a storage/maintenance building to house their equipment; they would like to get a new village council building and put the two buildings next to each other
- They also want storage for boat haul-out; there is a property down at the beach to put a building they are looking at (attached map shows available parcels for development)

- The village does culvert cleaning and pothole grading, as needed, approximately three times per summer
- Road erosion and drainage facilities need to be maintained
- Need more seasonal maintenance to prevent flooding during breakup; don't leave berms on the side; need assistance researching and developing a work plan*
- There is an existing village ordinance for helmets but people don't always obey
- There are more and more SUVs and trucks, not just ATVs in the village
- Drivers education is always needed; if the parents aren't talking about it, the kids aren't listening
- Like the idea of an incentive program for helmet use; could identify this first and then start to advertise, post on Facebook, distribute information on the computer, etc.
- Get one or two people in the community educated in ATV safety and then have them host a class once or twice a year, preferably summer and winter
- Advocate for more trooper programs
- Drive slow, dust control, speed limit signs for kids to respect
- Hydro-seed sides of roads for dust control
- The village has a gravity-fed water tank (apx.1500-2000 gallons) equipped for a semi-truck, but don't have equipment big enough to pull it, would need to get a trash pump too
- Volkswagen emission lawsuit? Could get money to purchase a large vehicle (available for 29 villages) research for help with this*
- Have more ETT trained personnel in the community
- A few incidences of people driving off the road from drunk driving and bumping into poles, but nothing they can specifically remember
- Last year a 17 year old girl was driving and the ATV front wheels locked up, causing her to wreck; the Honda's handle bars were bent up; sometimes people leave ATVs/SUVs at party houses; roads are slippery driving late at night
- Use Facebook to post about impaired driving, posters, etc.
- 25 household members and 30 kids in the community
- Fill a VPO or VPSO position to monitor and enforce drunk driving
- Reflectors fell off the power poles, need guy wire covers, etc.
- More streetlights
- Street cameras? For speeding and crashes
- Hire a safety coordinator to work with program manager, IGAP, IRR etc. to combine efforts and emphasis areas, to potentially include the elder transit and handicap facilities, and to consolidate resident needs for transportation services
- If you know the country then you'll know where you're at, but many of the trails are water based so markers are not feasible; there are tripods on the New Stuyahok trail
- Mark entry to the village or a trail head
- Cell tower on the hill for improved communications on the trails; want to put a beacon/tower on the Stuyahok trail; project in the works with a communications company
- Obtain search and rescue equipment (they have very outdated equipment), need handheld GPS and radios for searchers; village council has an ATV and IGAP has a snowmachine
- Search and rescue personnel need training and education on proper gear and what to bring in those situations

- Thin ice is an issue, but it's common knowledge
- Interested in some sort of log or sheet for people to communicate where they are going and when they will be back; use Facebook to remind people to tell their family members
- Have a couple boards with float coats that are put away during the winter; some residents hang on to them over the winter but usually put them back; they are labeled
- Beach access has a sand ramp that can get boats in and out without too much trouble, they built a gravel ramp/pad for boats; in other parts of the beach, calm water causes silt and mud build up; boats and ATVs can get stuck
- Want to get a 75 ton crane to lift boats out
- Bristol engineers did a bulkhead back in 2003, but it is experiencing erosion and needs to be redone; need more information on funding and options for this*
- Could put up signs and information near the Kids Don't Float board
- Village is pushing for an extended runway (for new cannery in progress); would like a cross strip runway too
- Need an emergency building at the airport; had an elder that froze to death trying to stay warm in a loader bucket in 2004 at the airport; the building could have a phone, communication/weather station for airlines; consider including this building with the new council/maintenance buildings; Building could store sand for the tarmac to reduce ice, but the state is responsible for the maintenance
- Lights were recently replaced on the runway
- Need an excavator to pull the alders up from the side of the road; brush cutting at corners
- Want to develop roads in the future because kids growing up will need their own properties (see attached map)

TTSP Public Meeting Notes

- The community members questioned where the AADT numbers came from because the State does not own or maintain roads; they are City owned and maintained by the Tribe
- More visual signs around the community for elders that cannot see well or hear. Some of these elders are pedestrians
- Elder passed away at the airport because of the cold; The community liked the idea of having a shelter of some kind at the airport
- Shuttle to and from airport
- Getting an agent per airline in the community, someone to shuttle to and from airport for that airline (example – an agent for Dena'ina Air)
- Helmet program; Bristol will be providing the information to the Community about the program; The community is looking for funding for helmets; School consists of 25 kids

THMP Public Meeting Notes

- Desire to include weatherization as a strategy for wind and cold
- Have had big tidal effects where it pulled some structures off the beach,due to wind and storms; the road on the upper end of town gets flooded; had to add gravel to build up the road which seemed to help; occurs every year
- There was a 5.0 earthquake in King Salmon recently; nobody felt it in Levelock but one guy saw his calendar swaying on the wall
- A neighbor's house flooded last week due to a busted pipe; nobody was home

- Do not have a registered boiler pan; the housing authority used to send one to the communities to check the boilers; need to revive that program; now there is a mixture of stoves, boilers, etc.
- Community gatherings like this meeting are the best way to spread information
- Posters work too (at post office, community hall, council, school, store, etc.), because it is hard to get people to come to meetings sometimes

Attachments:

1. Planning Team Meeting Sign-in Sheet
2. Safety Plan Candidate Emphasis Areas
3. Safety Implementation Plan Tables
4. Public Meeting Sign-in Sheet
5. Public Meeting Flyer
6. Public Meeting Handouts
7. Public Meeting Presentation Slides
8. Land Ownership / Community Development Map

Meeting Minute attachments pertaining to Public Involvement

End Meeting Minutes

CC: File

Community Meeting

Levelock Tribal Transportation Safety Plan & Tribal Hazard Mitigation Plan (2019 - 2024)

Date / Location: January 23, 2019 at 5 PM / Rec Hall

Sign In Sheet

Name	Name	Name
Chadolin Washington		
Shirley Andrew		
Greg Andrew Jr		
Toshya Andrew		
Ryan Andrew		
Sam Wassillie		
Lucinda Tallekpalek		
Rhea Andrew		
John Gregory		
Gustie Tallekpalek		
Alexandra Zaller		
Dereck Wassillie		

LEVELOCK TRANSPORTATION SAFETY PLAN & HAZARD MITIGATION PLAN

COMMUNITY MEETING

Come learn about two new projects in the works! The first is a Tribal Transportation Safety Plan, which proposes strategies to improve safety of local roads, trails, boating facilities, and airport. The second project is a Tribal Hazard Mitigation Plan, which proposes strategies to protect the community against natural disasters such as wildfires, floods, earthquakes, & more.

We want to hear from you!

Attendees can provide input about safety and hazard priorities for the community. The project planners will be available for any questions or feedback from the public.

Posting date 1/9/2019

Wednesday
January 23, 2019
5:00 PM

Rec Hall

Door Prizes!

Snacks & Refreshments

Discuss the future of Levelock!

For more information or to submit comments contact:

Jackie Wander
(907) 563-0013
jwander@bristol-companies.com

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Community Meeting Handout
Levelock Tribal Transportation Safety Plan
January 23, 2019

Dear Participant;

Thank you for attending the public meeting for the Levelock Tribal Transportation Safety Plan project. Your participation is crucial to the planning process. We appreciate any feedback you may have on this meeting or the project in general.

Bristol Engineering has been contracted by Bristol Bay Native Association (BBNA) on behalf of the Levelock Village Council to develop a Tribal Transportation Safety Plan (TTSP) for your community. A TTSP is a collaborative and comprehensive document that identifies transportation safety issues and strategies to address them. The overarching goal is to reduce risk of car crashes, fatalities, and injuries on the local transportation system. The TTSP is also essential for obtaining funding for safety projects. The TTSP project is currently at the Draft report level. After this public meeting, Bristol will incorporate public comments into a Final Draft TTSP, which will be submitted to the Council for review.

The purpose of this public meeting is to present the Draft TTSP to the community, as well as better understand the community's transportation safety priorities. Priorities can be any project or program aimed at improving safety for any mode of travel including roads, trails, pedestrian features, boating and aviation facilities, and more. Your comments will help determine emphasis areas for the plan.

Public comment is key to a successful project. Please feel free to contact me directly with any comments or concerns. I can be reached by email at jwander@bristol-companies.com or by phone (907) 743-9314.

Sincerely,

Jaclyn (Jackie) Wander
Civil Engineer II

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Community Meeting Handout
Levelock Tribal Hazard Mitigation Plan
October 25, 2018

Dear Participant;

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

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

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

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

Sincerely,

Danielle Dance
Civil Engineer I

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

Bristol Bay Native Association
Transportation and Infrastructure Development

August 2018 Newsletter 1

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

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

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

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

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

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

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

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

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

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

We Need Your Help

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

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

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

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

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

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

BBNA Tribal Hazard Planning Team

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

Public Participation

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

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

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

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

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

Useful web links

Volcano Information

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

Weather Information

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

WEBSITES

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


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


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Ready.gov/prepare

12 WAYS TO PREPARE

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

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- ☐  Document and Insure Property

Levelock Village
Tribal Transportation Safety Plan

Bristol Engineering Services Company, LLC
Jackie Wander, Civil Engineer II

Safety Minute

Presentation Overview

- What is a Safety Plan?
- Importance of Safety Plans
- The Four E's of Safety
- Steps to Develop a Safety Plan
- Data Collection & Surveys
- Emphasis Areas
- Implementation Plan
- Next Steps
- Questions / Comments
- Hazard Mitigation Plan Presentation
- Door Prizes!

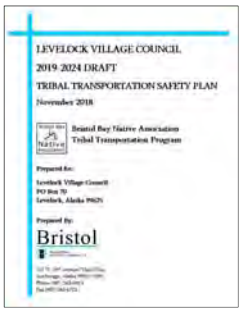
Tribal Transportation Safety Plan

"A Transportation Safety Plan is a collaborative and comprehensive document that identifies transportation safety issues and strategies to address them. Effective Transportation Safety Plans lead to projects that make the transportation system safer."

~ U.S. Department of Transportation Federal Highway Administration
Developing a Transportation Safety Plan

Tribal Transportation Safety Plan

- Uses Data to Guide Transportation Investment Decisions
- Mechanism to Coordinate Safety Efforts
  - Engage leadership/stakeholders
  - Collect/analyze data
  - Determine emphasis areas
  - Identify strategies
- Evaluates Existing Efforts


LEVELOCK VILLAGE COUNCIL
2019-2024 DRAFT
TRIBAL TRANSPORTATION SAFETY PLAN
November 2018
Bristol Bay Native Association
Tribal Transportation Program
Bristol

Importance of Safety Plans

- Proactive Approach to Planning
  - Prevents crashes
  - Improves unsafe transportation conditions
- Addresses Most Critical Safety Needs
- Develops Partnerships
- Fosters Multidisciplinary Cooperation
- Increases Access to Safety Funding

"Planning with safety in mind saves lives"

Four E's of Safety

- EDUCATION
  - Gives drivers information about making good choices
  - Informs about rules of the road
- ENFORCEMENT
  - Enforces traffic laws
  - Provides visible police presence
- ENGINEERING
  - Addresses roadway infrastructure
- EMERGENCY SERVICES
  - Provides rapid response
  - Quality of care when responding to collisions causing injury

Safety Plan Development

- Step 1 – Establish Safety Leadership Framework
- Step 2 – Collect & Analyze Safety Data
- Step 3 – Determine Emphasis Areas
- Step 4 – Identify Strategies
- Step 5 – Prioritize/Incorporate Strategies
- Step 6 – Draft a Plan
- Step 7 – Evaluate/Update the Transportation Safety Plan

Safety Partners

- Levelock Village
- City of Levelock
- Levelock Natives Limited
- Levelock Clinic
- Alaska State Troopers
  - King Salmon Post
- Levelock Electric Cooperative, Inc.
- BBAHC
- BBNA
- Bristol Engineering / BBNC
- Alaska DOT&PF
- FHWA
- BIA TTP
- DNR / Coast Guard

Existing Safety Efforts

- Road & Trail Maintenance
  - Filling potholes
  - Brush cutting
  - Snow plowing
  - Culvert cleaning
  - Markers on ice trails
- Road Improvements
  - Salmon Street Rehabilitation
- City youth ATV helmet ordinance
- Streetlights
- Kids Don't Float loaner board

Photo Source: Alaska Department of Natural Resources

Data Collection

- Anecdotal Crash Data
- Traffic Counts
- Public Surveys

Anecdotal Crash Data

- 3 minor accidents in ~40 years
  - Driving off road
  - Intoxicated driving
  - Bumping into power poles

Bristol

Levelock
Tribal Transportation Safety Plan
January 23, 2019

Traffic Counts

- Alaska DOT&PF
- Average Annual Daily Traffic (AADT) Data
- 6 Streets
- 2015-2017

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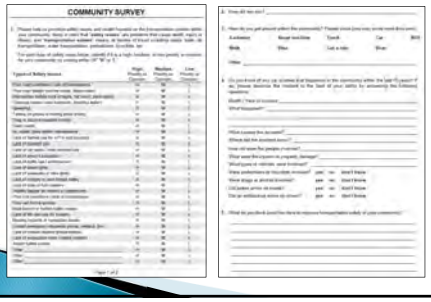
Tribal Transportation Safety Plan
January 23, 2019

Public Surveys

- Need surveys



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Tribal Transportation Safety Plan
January 23, 2019

Public Surveys

- Question 1 – Rank safety priorities
- Question 2 – How old are you?
- Question 3 – How do you get around within the community?
- Question 4 – Crash data
- Question 5 – What do you think could be done to improve transportation safety within the community?

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January 23, 2019

Candidate Emphasis Areas

- Road maintenance
  - Gravel source
  - Funding
  - Storage building
- ATV helmet use
- Dust
- Drunk driving
- Trail safety
  - Trail markers
  - New GCI tower out of town
- Elder transit service
- Boating safety
  - All tide dock & boat ramp
  - Search & rescue vehicles
  - Kids Don't Float
- Airport safety
  - Cross strip runway
  - Light replacement
- Others? Comments?

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Tribal Transportation Safety Plan
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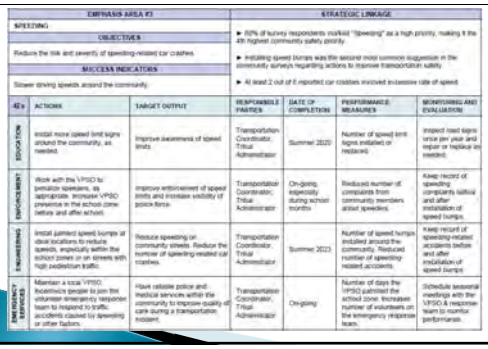
Implementation Plan



EMPHASIS AREA #3	STRATEGIC LINKAGE
SPEEDING	► 69% of survey respondents marked "Speeding" as a high priority, making it the 4th highest community safety priority.
OBJECTIVES	► Installing speed bumps was the second most common suggestion in the community surveys regarding actions to improve transportation safety.
Reduce the risk and severity of speeding-related car crashes.	► At least 2 out of 6 reported car crashes involved excessive rate of speed.
SUCCESS INDICATORS	
Slower driving speeds around the community.	

#3	ACTIONS	TARGET OUTPUT	RESPONSIBLE PARTIES	DATE OF COMPLETION	PERFORMANCE MEASURES	MONITORING AND EVALUATION
EDUCATION	Install more speed limit signs around the community, as needed.	Improve awareness of speed limits	Transportation Coordinator, Tribal Administrator	Summer 2020	Number of speed limit signs installed or replaced.	Inspect road signs once per year and repair or replace as needed.
ENFORCEMENT	Work with the VPSO to: (enhance speakers, as appropriate, increase VPSO presence in the school zone before and after school).	Improve enforcement of speed limits and increase visibility of police force.	Transportation Coordinator; Tribal Administrator	On-going, especially during school months	Reduced number of complaints from community members about speeders.	Keep record of speeding complaints before and after installation of speed bumps.
ENGINEERING	Install painted speed bumps at ideal locations to reduce speeds, especially within the school zones or on streets with high pedestrian traffic.	Reduce speeding on community streets. Reduce the number of speeding-related car crashes.	Transportation Coordinator, Tribal Administrator	Summer 2023	Number of speed bumps installed around the community. Reduced number of speeding-related accidents.	Keep record of speeding-related accidents before and after installation of speed bumps.
EMERGENCY SERVICES	Maintain a local VPSO. Incentivize people to join the volunteer emergency response team to respond to traffic accidents caused by speeding or other factors.	Have reliable police and medical services within the community to improve quality of care during a transportation incident.	Transportation Coordinator, Tribal Administrator	On-going	Number of days the VPSO patrolled the school zone. Increases number of volunteers on the emergency response team.	Schedule seasonal meetings with the VPSO & response team to monitor performance.

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Tribal Transportation Safety Plan
January 23, 2019

Next Steps

- Public Surveys!!
- Draft Safety Plan
  - March 2019
  - Collect public comment
- Final Draft Safety Plan
  - April 2019
  - Council review
- Final Safety Plan
  - May 2019
  - Resolution
- Implementation

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Questions or Comments

Levelock FEMA Tribal Hazard Mitigation Plan

Bristol Engineering Services Company, LLC
Danielle Dance

Presentation Overview

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

U.S. Army Corps of Engineers *Alaska District*
Alaska Baseline Erosion Assessment
Erosion Information Paper – Levelock, Alaska
November 10, 2007

Project Background

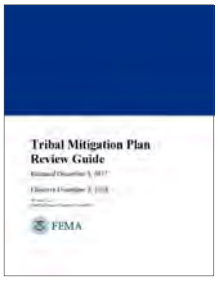
- BBNA DOTID awarded Pre-Disaster Mitigation Program grant from FEMA
  - Develop the Tribal Hazard Mitigation Plan
  - Contracted BESC
- Hazard Mitigation
  - eliminates risk to or reduces hazard impact severity to community assets
  - Projects can be long or short term
- Purpose of Plan
  - Identify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

Bristol Bay Native Association

Bristol ENGINEERING SERVICES COMPANY, LLC

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



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 – Levelock, Alaska
November 10, 2007

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Identified Hazards

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

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Tribal Transportation Safety Plan
January 23, 2019

Community Assets

- Asset
  - People
  - Economy
  - Built Environment
  - Natural Environment

Levelock Watershed Community Planning Project Final Summary Report – *Project of the Levelock Village Council w/ assistance from Agnew:Beck Consulting* September 30, 2005

- Major Community Assets
  - Village Council Office
  - Rainbow Hall Rec. Center
  - Churches
  - Cemetery
  - Utilities
  - Clinic
  - School
  - Roads / Trails
  - Barge Landing / Airport
  - Community Greenhouse
  - Others

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Mitigation Goals

- Goals Based on Vulnerability Statements
  - Severe storms with storm surges flood the low lying areas which impact homes and roads.
  - The bulk head is being damaged, property owners are losing land, and homes have been moved due to the effects of erosion.

FEMA Local Mitigation Planning Handbook March 2013

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Tribal Transportation Safety Plan
January 23, 2019

Mitigation Goals

- Community Goals
  - Reduce possibility of damages due to the profiled hazards.
  - Build the capacity of the Tribe to prepare, respond to, and recover from disasters.
  - Prevent damage to structures and infrastructure.
  - Promote cross-referencing of mitigation goals and actions with other Tribal planning mechanisms and projects.

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Tribal Transportation Safety Plan
January 23, 2019

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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Tribal Transportation Safety Plan
January 23, 2019

Mitigation Actions (Continued)

- Mitigation Actions
  - Identify an evacuation point for emergencies.
  - Fix bulkhead from erosion effects.
  - Protect again further erosion (sea wall or other option around public structures).
  - Communication device for traveling in cold weather and for other emergencies.
  - Upgrade power system.
  - Airport improvements
  - Dust control
  - Trail marker improvements between communities.
  - Updated firetruck
  - Fire extinguishers for community and homes.
  - Complete community emergency plan.
  - Work with neighboring communities on shared improvements.
- What other suggestions do you have?

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January 23, 2019

Continued Public Involvement

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

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

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January 23, 2019

Questions or Comments

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QUYANA!

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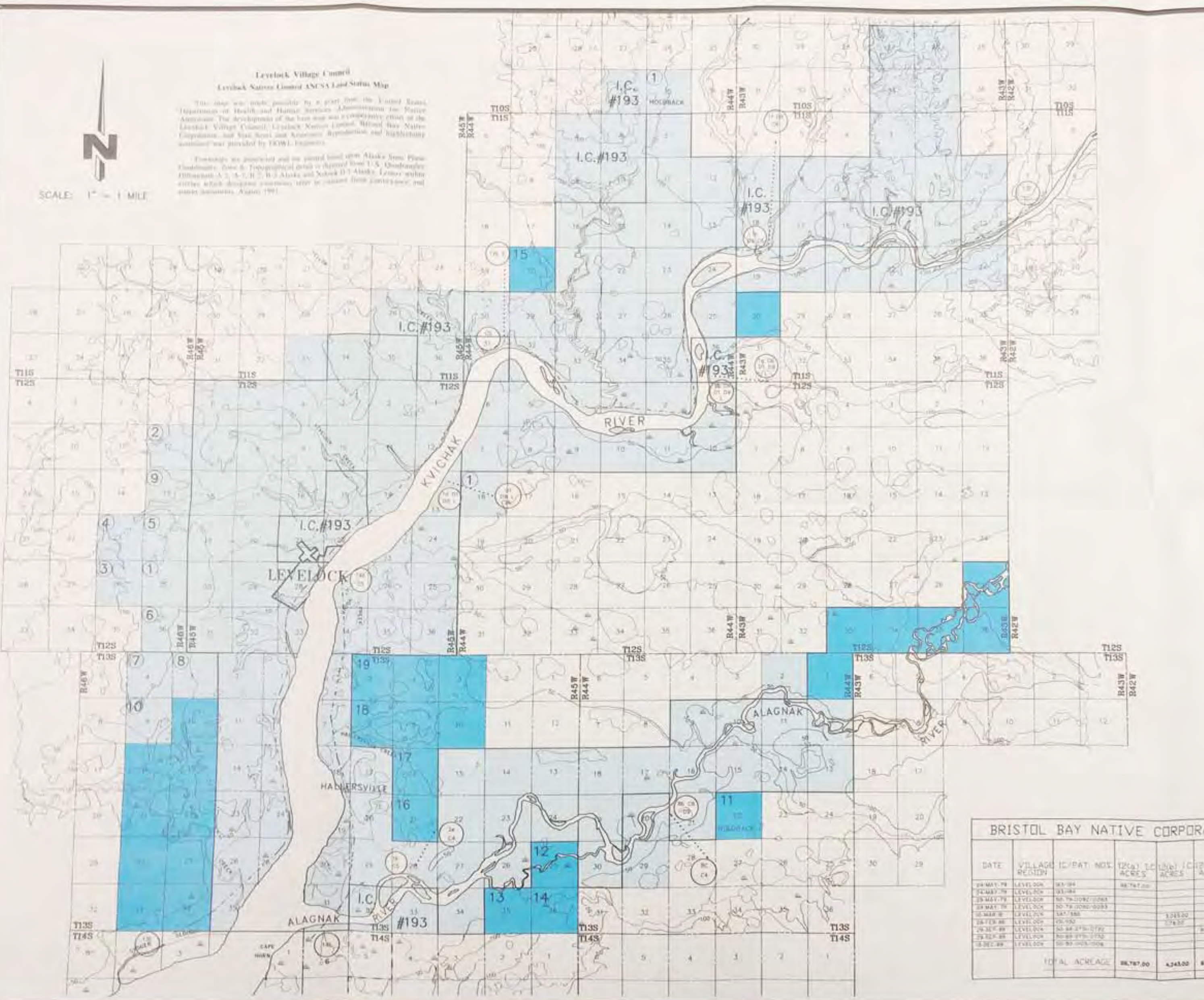


LEGEND

SELECTION TYPE

12(A) INTERIM CONVEYANCE / 12(A) PATENTED LANDS

1 TO 10 12(A) PRIORITIES

12(B)

11 TO 19 12(B) PRIORITIES

SELECTED LANDS BOUNDARY

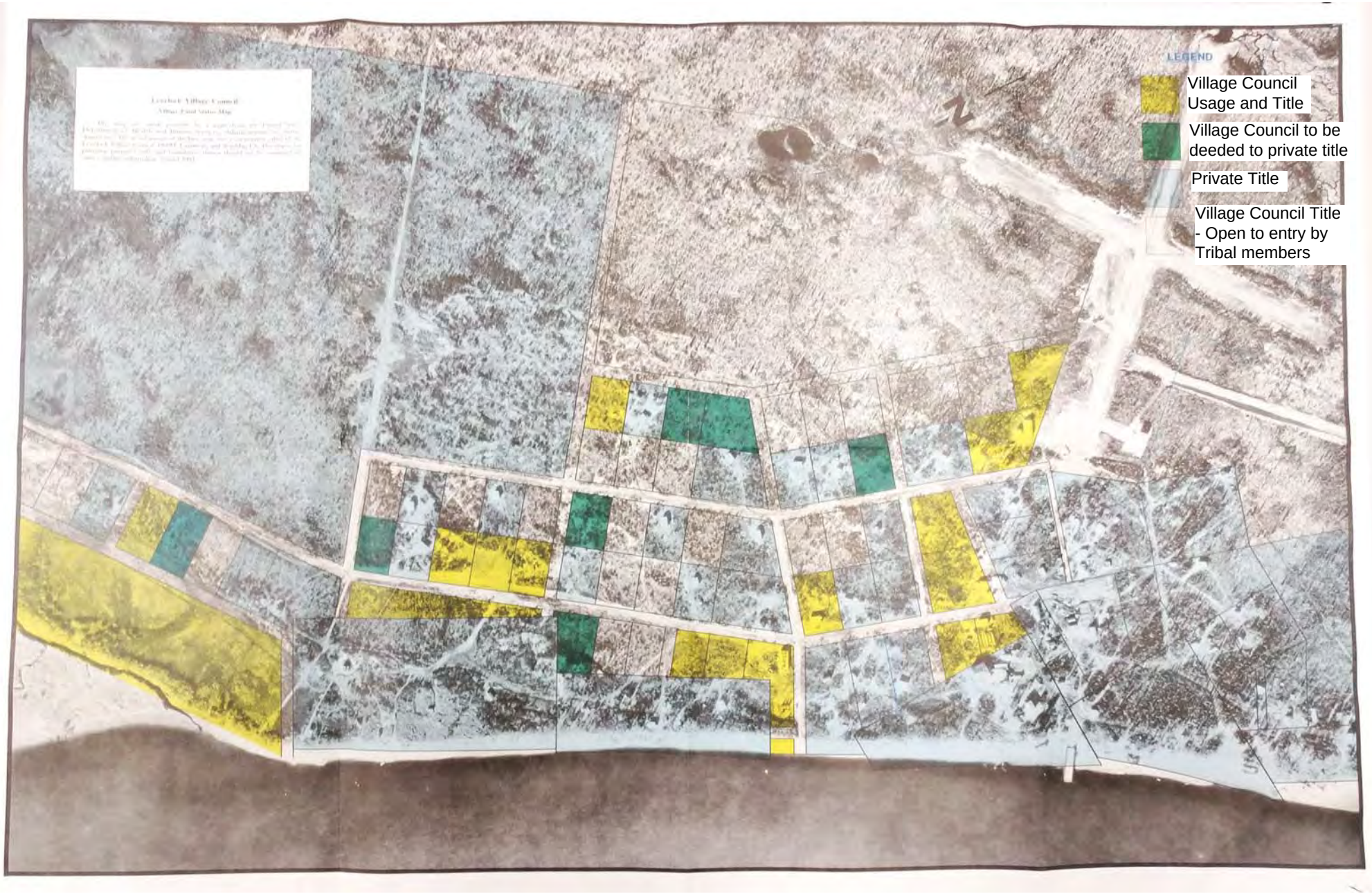
EXISTING TRAIL EASEMENT

PROPOSED TRAIL EASEMENT

CAMPSITE TRAIL DESIGNATION

BRISTOL BAY NATIVE CORPORATION RECORDED TITLE DOCUMENTS

DATE	VILLAGE REGION	IC/PAT NOS	12(a) IC ACRES	12(b) IC ACRES	12(a) PA ACRES	12(b) PA ACRES	REC DIST	BRISTOL BAY NATIVE CORPORATION DATE REC	BK NO	PAGE NOS	VILLAGE CORPORATION DATE REC	BK NO	PAGE NOS
24-MAY-79	LEVELOCK	183/184	88,767.00				KVICHAK	10/6/79	[illegible]	752-767	02/24/92	[illegible]	[illegible]
24-MAY-79	LEVELOCK	183/184					BRISTOL	09/21/79	22	493-500	MAY NOT BE RECORDED		
29-MAY-79	LEVELOCK	50-79-0092/0083			6.54		KVICHAK	10/1/79	[illegible]	738-751	02/24/92	[illegible]	[illegible]
29-MAY-79	LEVELOCK	50-79-0092/0083					BRISTOL	09/21/79	22	698-720	MAY NOT BE RECORDED		
[illegible]	LEVELOCK	387/388		3,245.00			KVICHAK	[illegible]	[illegible]	392	02/24/92	[illegible]	[illegible]
28-FEB-86	LEVELOCK	[illegible]		[illegible]			KVICHAK	03/10/86	17	826-827	[illegible]	[illegible]	[illegible]
29-SEP-88	LEVELOCK	50-88-0275-0792			[illegible]		KVICHAK	10/03/88	[illegible]	385-387	[illegible]	[illegible]	[illegible]
29-SEP-88	LEVELOCK	50-88-0275-0792					BRISTOL	10/09/88	35	400-408	MAY NOT BE RECORDED		
18-DEC-89	LEVELOCK	50-90-0005/0006				4,236.24	KVICHAK	12/27/89	[illegible]	575-577	04/10/90	[illegible]	[illegible]
		TOTAL ACREAGE	88,767.00	4,243.00	88,905.85	4,236.24							


LEGEND
Village Council Usage and Title
Village Council to be deeded to private title
Private Title
Village Council Title - Open to entry by Tribal members

COMMUNITY SURVEY

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

NATURAL HAZARD INFORMATION

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

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

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

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

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

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

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

If "YES", how recently?

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

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

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

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

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

COMMUNITY VULNERABILITIES AND HAZARD MITIGATION STRATEGIES

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

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

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

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

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

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

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

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

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

MITIGATION AND PREPAREDNESS ACTIVITIES IN YOUR HOUSEHOLD

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

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

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

GENERAL HOUSEHOLD INFORMATION

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

11. Please indicate your age: _____

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

13. How long have you lived in the community?

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

GENERAL COMMENTS

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

Thank you for taking the time to complete this survey.

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

SUMMARY - COMMUNITY SURVEY

A survey was distributed to the community members of Levelock, 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

9 questionnaires were completed and returned. Question 12 asked about the gender of the respondents. Five respondents were male, four were female (See Figure 1). Question 13 asked about the length of time in the community. 8 respondents were from residents that have lived in the community for 20 or more years, and 1 was from residents who lived there 10-19 years (See Figure 2).

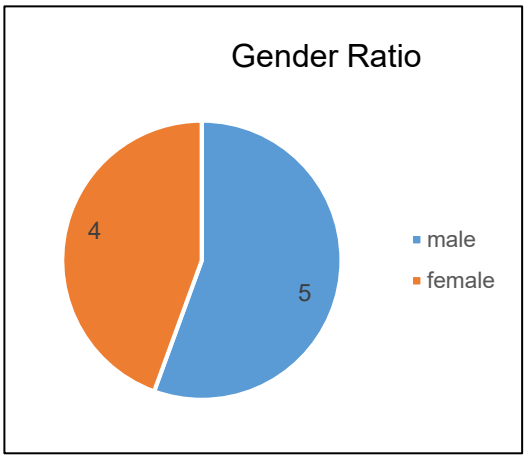


Figure 1: Gender Ratio (Question #12)

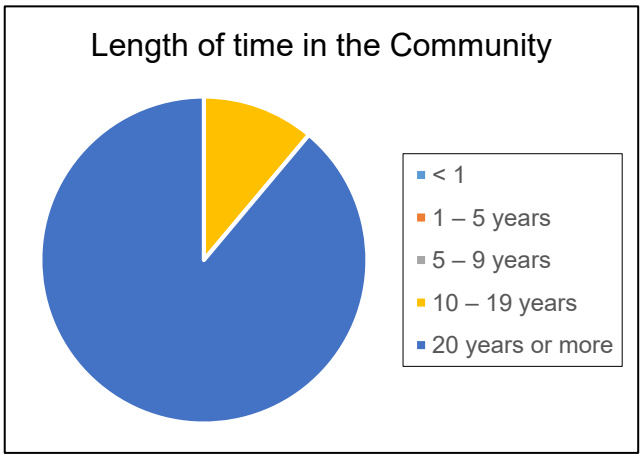


Figure 2: Length of Time in the Community (Question #13)

The ages of respondents ranged from 29-59 (Question 11, Figure 3).

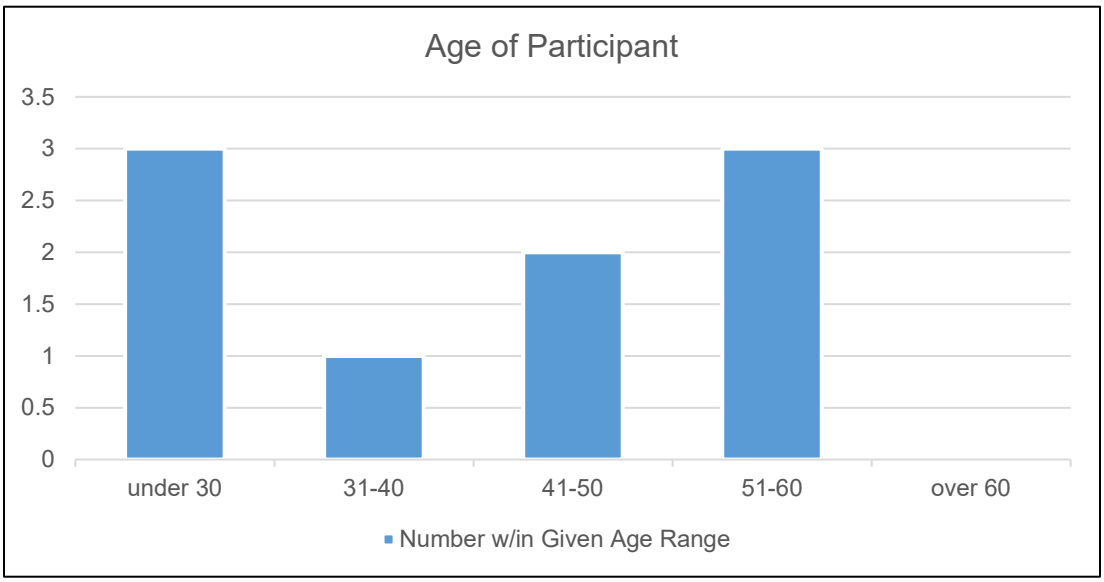


Figure 3: Age of Participant (Question #11)

NATURAL HAZARD INFORMATION

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

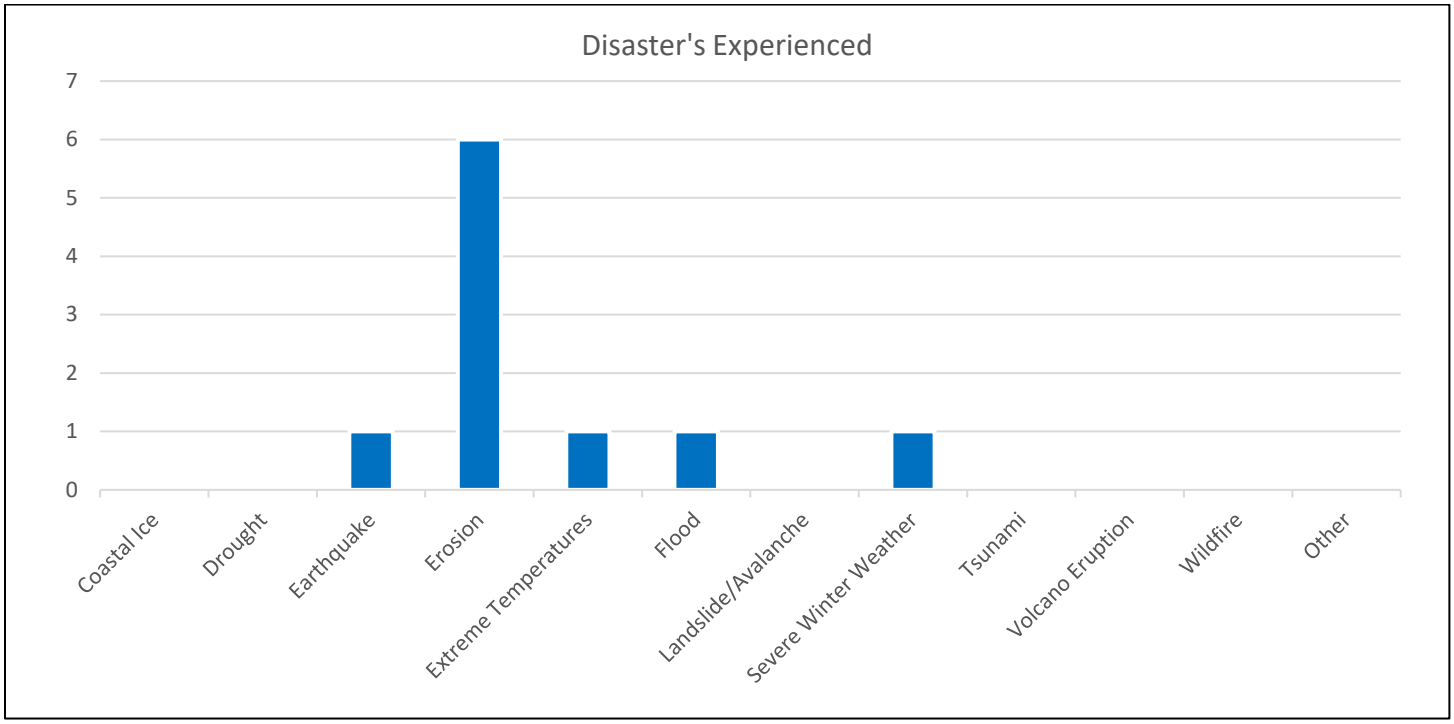


Figure 4: Disasters Experienced (Question #1)

Question #2 identified specific hazards that concerned the community members. The Community is most concerned about Erosion and Wildfire. Figure 5 identifies the concerns for the Community.

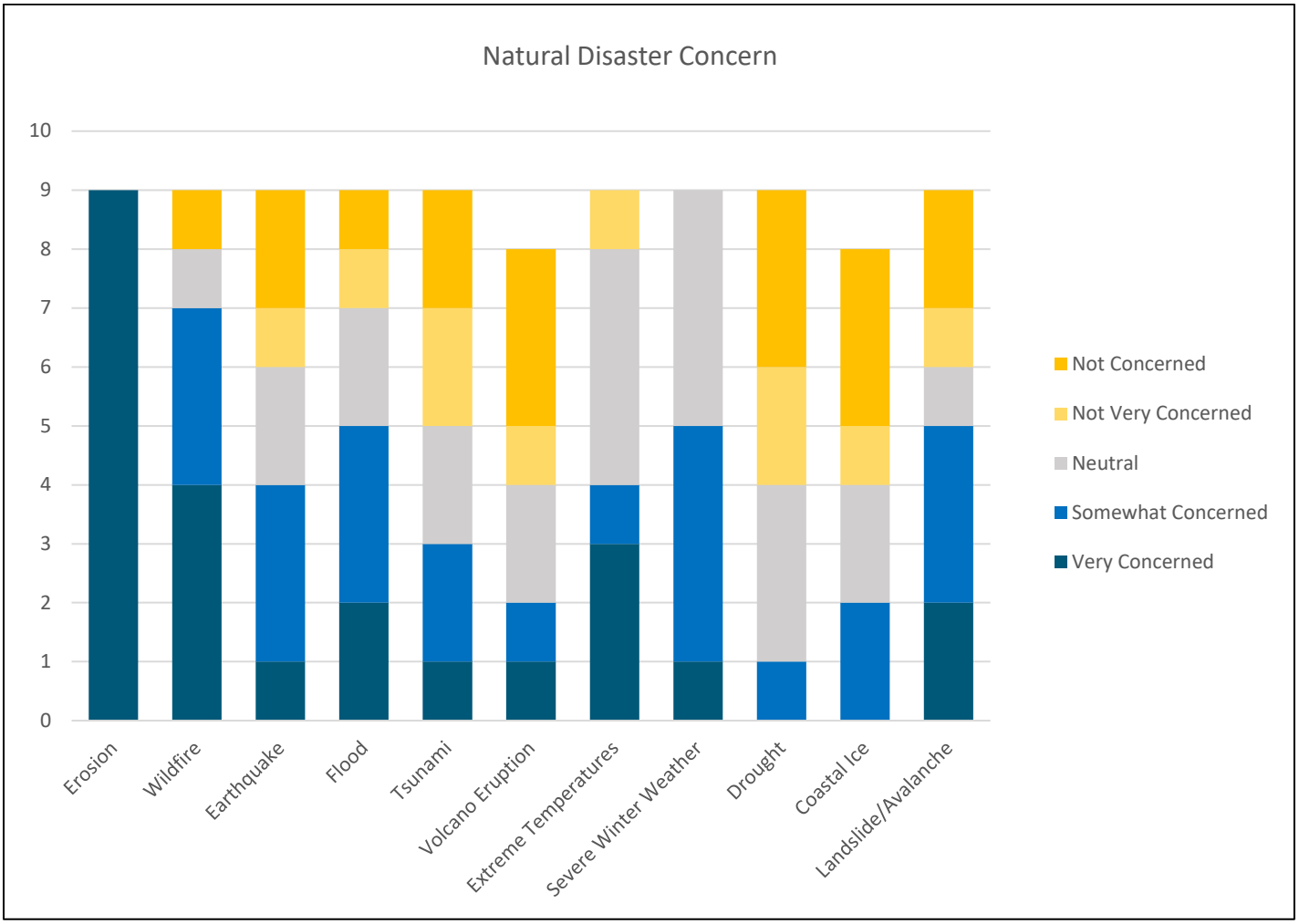


Figure 5: Natural Disaster Concern (Question #2)

The residents were asked if they received any information on how to make their homes and members of their household safe from a natural disaster (Question 3), and how long ago and where they received the information. (Question 4). One respondent reported receiving information from the tribe.

The residents were asked about the most effective way for them to receive information to protect their household and homes (Question 5). Figure 7 provides the respondents preferred method of receiving information about how to protect their homes and households.

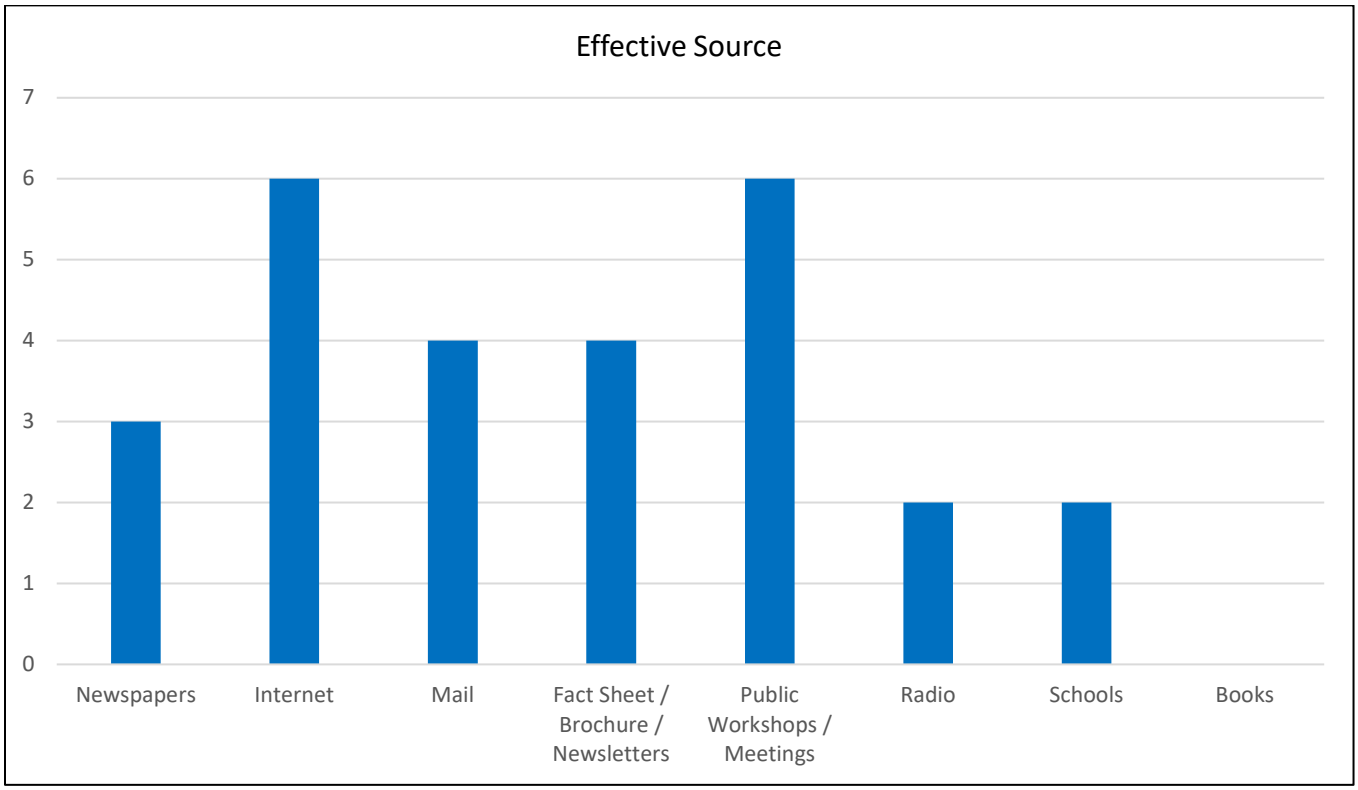


Figure 6: Effective Source (Question #5)

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.

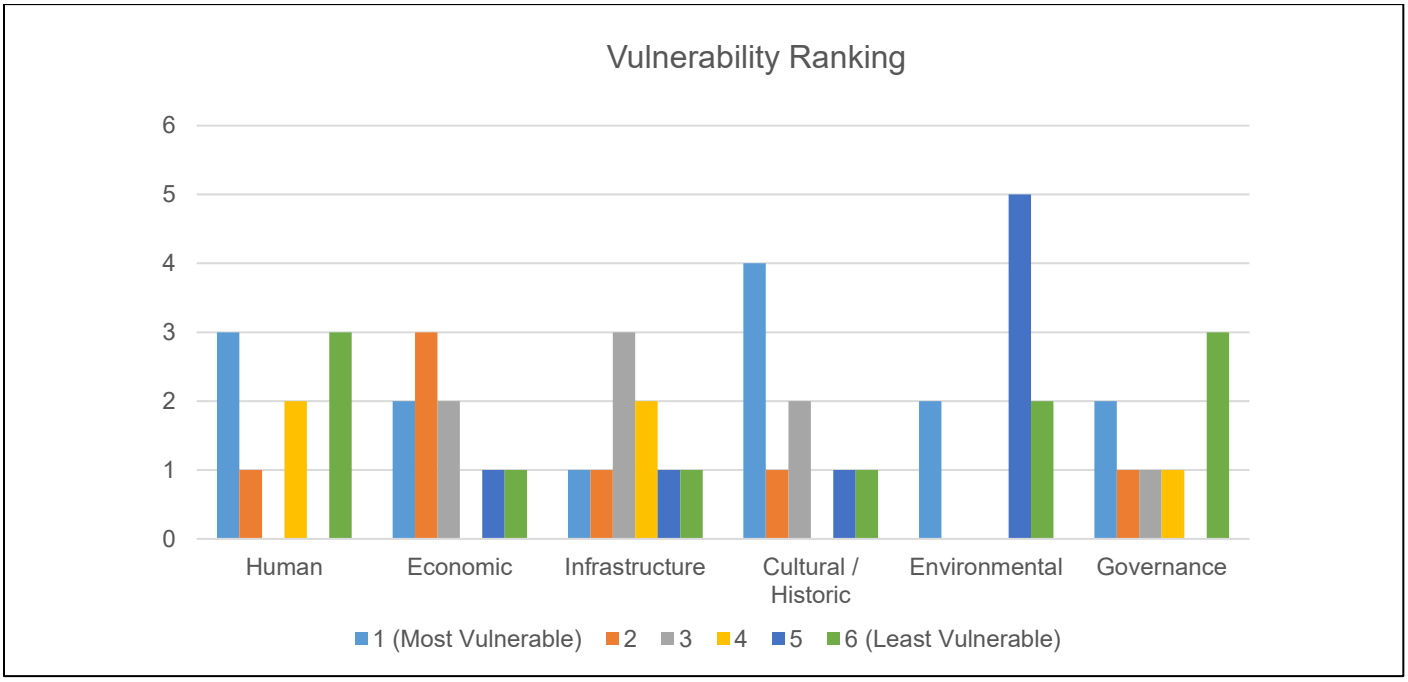


Figure 7: Vulnerability Ranking (Question #6)

Figure 9 shows to respondents' opinion of the importance of specific community assets (Question 7). The questionnaire had an "Other" category, two assets submitted in that category were Processing Plant and Setnet Fishery, both were listed as very important.

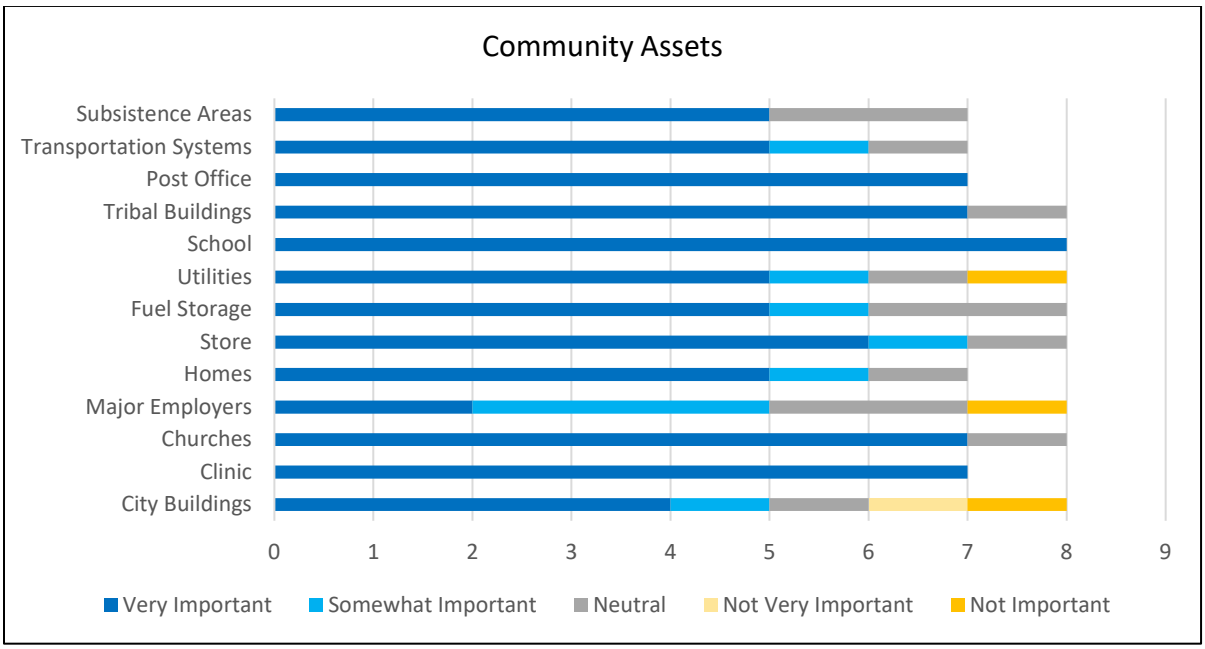


Figure 8: Community Assets (Question #7)

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

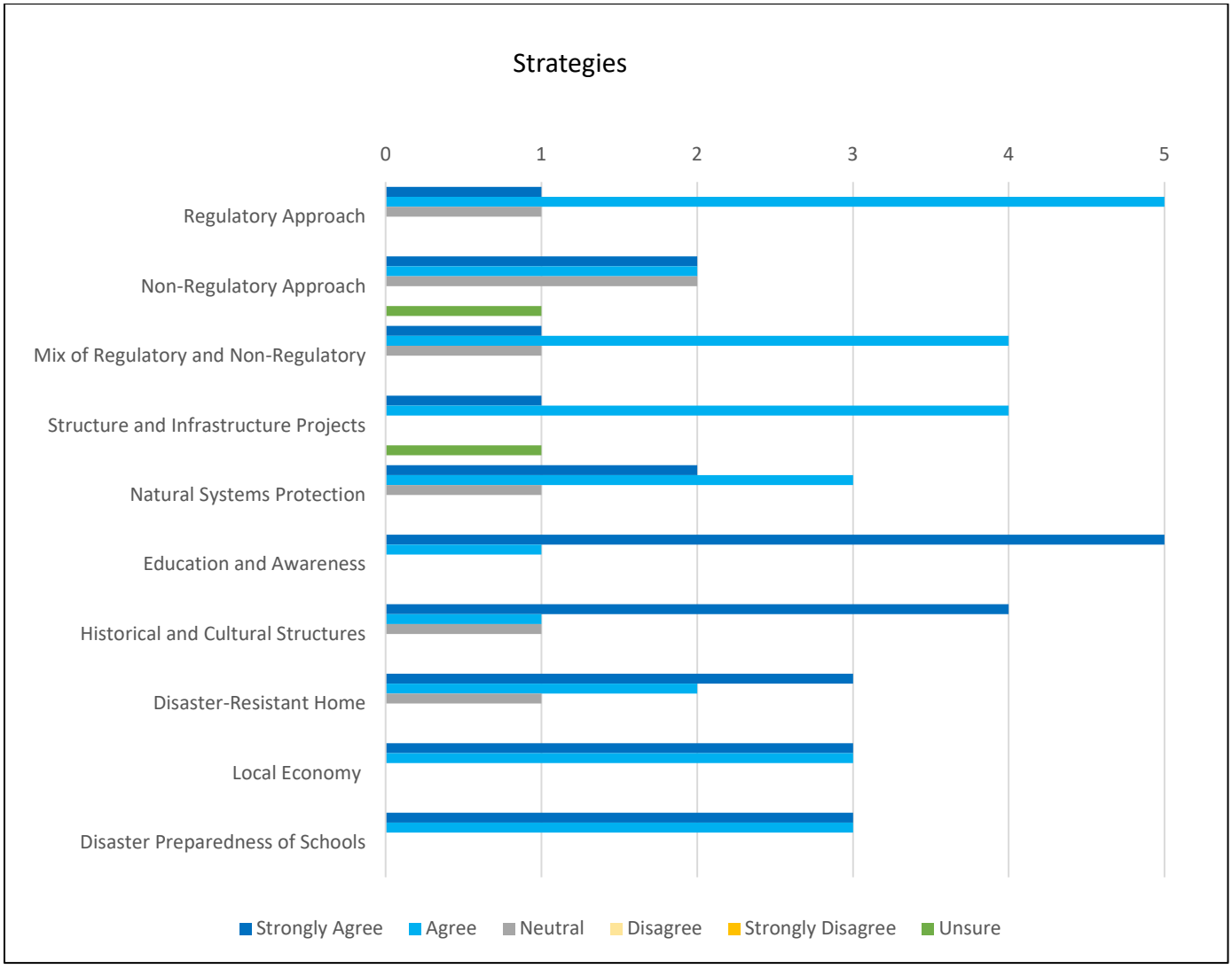


Figure 9: Mitigation Strategies (Question #8)

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

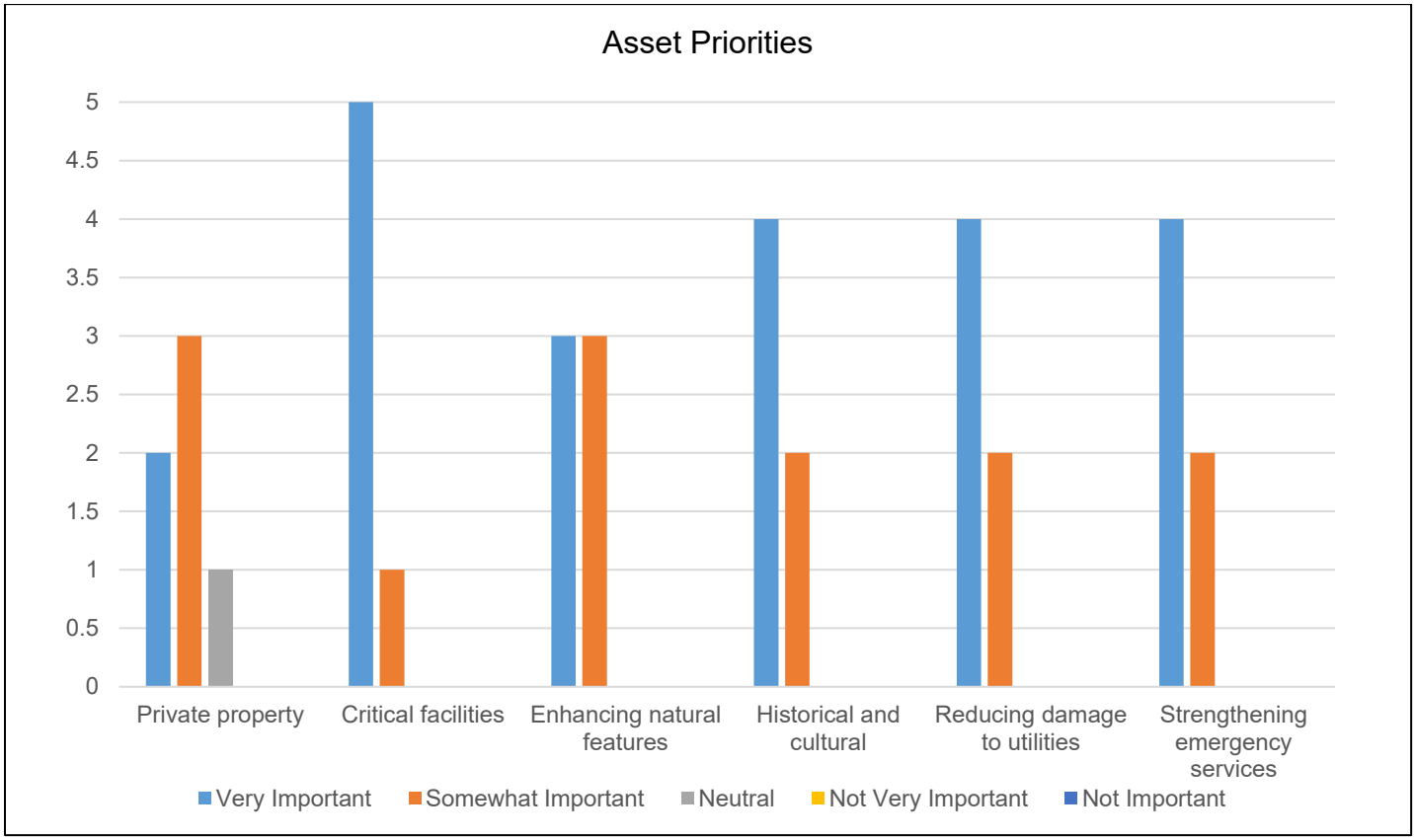


Figure 10: Asset Priorities (Question #9)

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)

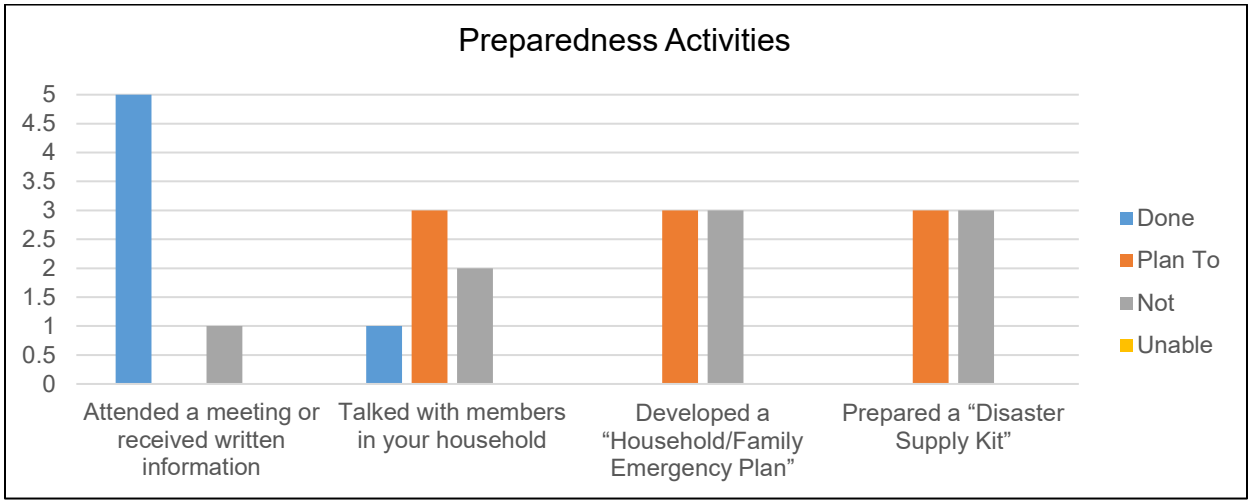


Figure 11: Preparedness Activities (Question #10)

GENERAL COMMENTS

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

- Dust control in our community. We have sand and brush. I realize that the brush in the village can cause a huge fire if it were to get out of control?
- In my opinion the hazard mitigation plan for communities should be done as a workshop in their community. Where the community as a whole can voice their thoughts.
- I am interested in securing dust control near the fish processing plant. I would suggest a fence along the road. Would Bristol design a fenced plat?
- Our beach erosion. Our Russian Orthodox Church is becoming too close to the bank. Graves are even closer. It was talked about to have a Bishop re-dig the graves and move them elsewhere.
- Bank Erosion - Some buildings including the Russian Orthodox Church and some graves are getting dangerously close to the edge of the bank. Our "dock" is eroding and falling out of its holds.
- When it snows, the ditches blend into the road.

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

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

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

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

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

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

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

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

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

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

We Need Your Help

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

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

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

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

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

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

BBNA Tribal Hazard Planning Team

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

Public Participation

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

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

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

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

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

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*** TX REPORT ***
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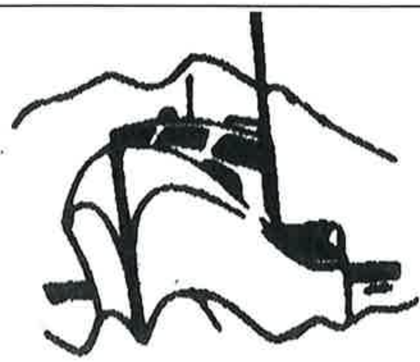

BRISTOL BAY NATIVE ASSOCIATION

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

FAX TRANSMISSION COVER SHEET

DATE: August 20, 2018

TO: Vlg Admin

FAX:

SENDER: Annie Fritze

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

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

3 PAGE (S), INCLUDING THIS COVER SHEET
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Chignik Bay

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TO: Vlg Admin

FAX:

SENDER: Annie Fritze

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

Quyana -

Dance, Danielle

From: Annie Fritze <afritze@bbna.com>
Sent: Wednesday, February 27, 2019 10:12 AM
To: apokray@hotmail.com; jmetrokin@bbnc.net; tmase@lpsd.com; ltinney@lpsd.com; levelockelectric@gmail.com; bakelkok@bbha.org; rclark@bbahc.org; Gayla Hoseth; rcoupchiak@bbahc.org; rlandrew@bbahc.org; kateconley@lakeandpen.com; manager@lakeandpen.com; Carla Akelkok; Kristina Andrew; jfulton@bristolbay.com; Senator.Lyman.Hoffman@akleg.gov; Representative.Bryce.Edgmon@akleg.gov; Program Managers
Cc: Dance, Danielle; Dan Breeden; Pearson, Isaac; Thomas Woods
Subject: Levelock's THMP
Attachments: Bristol Bay Native Association FEMA Newsletter2 Levelock.docx

Follow Up Flag: Follow up
Flag Status: Completed

Levelock 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 Levelock will be made available to the Tribal offices for public review and comment February 27-March 7, 2019.
This plan is available on BBNA's web page for public comment at https://www.bbna.com/wp-content/uploads/DRAFT-FEMA-THMP-Levelock-25Feb2019-Web.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 **March 07, 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
Quyana.

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

Bristol Bay Native Association
Transportation and Infrastructure Development

February 2019 Newsletter 2
Levelock

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

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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 Levelock is available at the Tribal office for public review and comment, February 27-March 7, 2019. This plan is also available on BBNA's web page at www.bbna.com for public comment. The goal is to receive comments, identify key issues or concerns and improve ideas for mitigation. When the draft plan is complete, the results will be presented to the community before submitting to FEMA for their preliminary approval and returned back to the Tribal Council for formal adoption.

Public comments should be received no later than **March 07, 2019.** Comments can be made via email, fax, or phone to Danielle Dance, Bristol Engineering Services Company, LLC at: ddance@bristol-companies.com, (907)563-0013 or by fax at (907)563-6713.

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

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

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

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

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

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

Dance, Danielle

From: Annie Fritze <afritze@bbna.com>
Sent: Tuesday, March 5, 2019 11:25 AM
To: Kristina Andrew
Cc: Dance, Danielle
Subject: RE: Mining in the hazard mitigation plan?

Hi
I am forwarding this to Danielle for public comment for Levelock

From: Kristina Andrew <krandrew@bbna.com>
Sent: Tuesday, March 05, 2019 11:24 AM
To: ddance@bristol-companies.com; Annie Fritze <afritze@bbna.com>
Cc: Alexander Tallekpalek <tllkplk@outlook.com>; Robert Heyano <rheyano@gmail.com>; Patty Heyano <pheyano@bbna.com>
Subject: Mining in the hazard mitigation plan?

Danielle,
I am just wondering if any of our 31 Tribes Hazard Mitigation plans address mining and disaster related to mining. It was brought to my attention that if this topic was covered in our Hazard Mitigation plans it could help stop Pebble by placing extreme restrictions on them. I know Levelock's plan is still in public comment. But this is something we should be looking at for a majority of our communities, not just natural disasters.

Kristina Andrew
Economic Development Program Manager
Bristol Bay Native Association
krandrew@bbna.com
907-842-6223
907-842-5257 ext. 323

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 Bryce Edgmon
State Capitol Room 208
Juneau, AK 99801

RE: Introducing BBNA's Tribal Hazard Mitigation Planning Project

Dear Representative Edgmon:

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

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

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

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

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

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

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

Sincerely,
Bristol Bay Native Association

Ralph Andersen,
President/Chief Executive Officer

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

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

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.

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

Sincerely,
Bristol Bay Native Association

Ralph Andersen,
President/Chief Executive Officer

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

APPENDIX C

Plan Maintenance

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

MAINTENANCE MONITORING FORM

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

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

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

PLAN UPDATE EVALUATION FORM

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

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

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

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APPENDIX D

Funding Sources

CLIMATE RESILIENCE IN ALASKAN COMMUNITIES

Catalog of Federal Programs

PRODUCT OF THE

Coastal Erosion Working Group

OF THE ARCTIC EXECUTIVE STEERING COMMITTEE

September 2, 2015

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

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

Ambassador Mark Brzezinski
Executive Director, Arctic Executive Steering Committee

Overview

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

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

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

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

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

About the Arctic Executive Steering Committee

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

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

Quick Reference Programs Matrix

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

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

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

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

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

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

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

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

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

Program Name: Flood Mitigation Assistance (FMA)

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

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

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

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

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

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

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

Program Name: Hazard Mitigation Grant Program (HMGP)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Funding Range: Varies.

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

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

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

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

Program Name: Economic Adjustment Assistance Program

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

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

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

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

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

Program Name: Public Works Program

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

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

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

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

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

DOC – National Oceanic and Atmospheric Administration (NOAA)

Program Name: Alaska Center for Climate Assessment & Policy

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

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

Funding Range: Varies.

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

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

Program Name: Alaska Ocean Observing System

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

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

Funding Range: $0-$500k.

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

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

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

Program Name: Analyze, Forecast, and Support

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

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

Eligible Applicants: None, work is performed by NOAA.

Funding Range: N/A

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

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

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

Program Name: Integrated Ocean & Coastal Mapping Program

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

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

Funding Range: N/A

Program Activities: Federal mapping coordination.

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

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

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

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

Funding Range: N/A

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

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

Program Name: Climate Program

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

Eligible Applicants: None, work is performed by NOAA.

Funding Range: Varies.

Program Activities: Varies.

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

Program Name: Observations

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

Eligible Applicants: None, work is performed by NOAA.

Funding Range: N/A

Program Activities: Weather and sea ice observations.

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

Department of Energy (DOE)

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

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

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

Funding Range: Varies.

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

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

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

Program Name: Tribal Energy Program

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

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

Funding Range: Varies.

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

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

Department of the Interior (DOI)

Program Name: Alaska Climate Science Center

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

Eligible Applicants: Any

Funding Range: No specific funding levels or deadlines.

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

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

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

Purpose: Technical assistance in preserving cultural resources.

Eligible Applicants: All Tribes and Corporations in Alaska.

Funding Range: No specific funding levels or deadlines.

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

Additional Information: Telephone: (907) 644-3456

Program Name: Landscape Conservation Cooperatives

Purpose: Science and technical assistance.

Eligible Applicants: Any village or other entity.

Funding Range: No specific funding levels or deadlines.

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

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

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

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

Program Name: North Slope Science Initiative

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

Eligible Applicants: Any.

Funding Range: No specific funding levels or deadlines.

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

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

Program Name: Subsistence – ANLICA Title VIII

Purpose: Technical assistance related to subsistence.

Eligible Applicants: Any Tribe or village in Alaska.

Funding Range: No specific funding levels or deadlines.

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

Additional Information: Telephone (907) 644-3596.

DOI – Bureau of Indian Affairs (BIA)

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

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

Eligible Applicants: Federally Recognized Tribes.

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

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

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

Program Name: Indian Energy Resource Development Program

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

Eligible Applicants: Federally Recognized Tribes.

Funding Range: Varies depending on appropriations.

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

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

Program Name: Tribal Transportation Program

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

Eligible Applicants: Federally Recognized Tribes.

Funding Range: TTP is formula funded.

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

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

Department of Transportation (DOT)

Program Name: Transportation Investment Generating Economic Return (TIGER)

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

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

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

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

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

DOT – Federal Aviation Administration (FAA)

Program Name: Airport Improvement Program

Purpose: Airport improvement planning and development.

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

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

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

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

DOT – Federal Highway Administration (FHWA)

Program Name: Federal-aid Highway Apportioned Funds

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

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

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

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

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

Program Name: Tribal Transportation Program (TTP)

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

Eligible Applicants: Federally recognized Tribes.

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

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

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

DOT – Federal Transit Administration (FTA)

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

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

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

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

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

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

Environmental Protection Agency (EPA)

Program Name: Alaska Native Village Grant

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

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

Funding Range: Funding varies.

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

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

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

Program Name: Clean Water Act Indian Set-Aside Program

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

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

Funding Range: Funding varies.

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

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

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

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

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

Funding Range: Up to $120,000.

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

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

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

Program Name: Environmental Justice Small Grants

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

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

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

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

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

Program Name: Indian General Assistance Program (IGAP)

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

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

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

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

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

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

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

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

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

Eligible Applicants: All water utilities can ask for assistance.

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

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

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

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

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

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

Funding Range: Funding varies.

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

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

Department of Health and Human Services (HHS)

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

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

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

Funding Range: $300,000 per Budget Period.

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

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

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

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

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

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

Eligible Applicants: N/A

Funding Range: Intramural.

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

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

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

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

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

Funding Range: N/A

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

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

Program Name: CDC –NIOSH Climate Change Initiative

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

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

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

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

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

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

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

Funding Range: N/A

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

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

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

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

Program Name: NIH / NIEHS Research to Action

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

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

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

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

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

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

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

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

Eligible Applicants: N/A

Funding Range: N/A

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

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

Department of Housing and Urban Development (HUD)

Program Name: Community Development Block Grant

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

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

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

Program Activities: Develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low-and moderate-income persons.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment

Program Name: Emergency Solutions Grants Program

Purpose: To provide grant funds to State and local governments for the rehabilitation or conversion of buildings for use as emergency shelter for the homeless, for the payment of certain expenses related to operating emergency shelters, for essential services related to emergency shelters and street outreach for the homeless, and for homelessness prevention and rapid rehousing.

Eligible Applicants: The homeless, homelessness prevention and rapid re-housing.

Funding Range: Annual formula grants for the State of Alaska and the Municipality of Anchorage.

Program Activities: Rehabilitation or conversion of buildings for use as emergency shelter for the homeless, for the payment of certain expenses related to operating emergency shelters, for essential services related to emergency shelters and street outreach for the homeless, and for homelessness prevention and rapid re-housing.

Additional Information: portal.hud.gov/hudportal/HUD?src=/hudprograms/esg

Program Name: Indian Community Development Block Grant

Purpose: Development of viable Indian and Alaska native communities, including decent housing, a suitable living environment, and economic opportunities, principally for persons of low and moderate income.

Eligible Applicants: Federally-recognized Tribes or Indian Organizations on behalf of Federally-recognized Tribes. For the standard ICDBG program, applicant must submit an application under the annual Notice of Funding Availability (NOFA). Applications for imminent threat grants are processed on a first come, first serve basis.

Funding Range: The Alaska Office of Native American Programs has an estimated ICDBG allocation for FY2015 of $6,500,000 for grant awards. The ICDBG program also has a national set-aside of approximately $3,500,000 to fund Imminent Threat applications.

Program Activities: The competitive ICDBG program may be used for new construction, rehabilitation, and acquisition of residential units and public facilities as well as housing services, economic development projects. There is also a national set-aside for ICDBG Imminent Threat (IT) grants that are intended to alleviate or remove threats to health or safety as described at 24 CFR Part 1003, subpart E.

These grants provide a solution to problems of an urgent nature that were not evident at the time of the ICDBG Single Purpose funding grant cycle or require immediate action. These are non-competitive grants up to $450,000 ($900,000 for Presidentially-Declared Disasters) on a first come first serve basis. 70 percent of each grant must support activities that benefit low and moderate income persons.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Mortgage Insurance for Disaster Victims – 203(h)

Purpose: This program provides mortgage insurance to protect lenders against the risk of default on mortgages to qualified disaster victims.

Eligible Applicants: Eligible customers are anyone whose home has been destroyed or severely damaged in a Presidential declared disaster area.

Funding Range: No down payment is required. The borrower is eligible for 100 percent financing. Closing costs and applicable fees must be paid according to program requirements.

Program Activities: Insure mortgages.

Additional Information: portal.hud.gov/hudportal/HUD?src=/hudprograms/mifdv_section203h

Program Name: Native American Housing and Self-Determination Act (NAHASDA) - Indian Housing Block Grant Program

Purpose: Supports a range of affordable housing activities on Indian reservations and Indian areas.

Eligible Applicants: Federally-recognized Tribes and their Tribally Designated Housing Entities are eligible to participate in this program.

Funding Range: Annual formula block grant to Indian Tribes and/or TDHEs. Alaska recipients received $94,588,589 State-wide in FY 2015 for the Indian Housing Block Grant program.

Program Activities: IHBG funding can be used for a variety of activities including new construction, rehabilitation, acquisition, housing services, and crime prevention. The Title VI loan guarantee program can be used to leverage all the above activities with a private market loan.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Section 184 Loan Guarantee Program

Purpose: Provides homeownership opportunities to Native American living on trust, restricted, and simple fee land.

Eligible Applicants: Native Americans, Tribes, or Tribally Designated Housing Entities.

Funding Range: Varies.

Program Activities: This program offers HUD approved loan guarantees to private sector lenders who make home mortgage loans to eligible participants.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

Program Name: Title VI Loan Guarantee Program

Purpose: To obtain financing for up to five times the amount of the Tribe's annual NAHASDA IHBG.

Eligible Applicants: Federally Recognized Tribes and their Tribally Designated Housing Entities are eligible to participate in this program.

Funding Range: Varies.

Program Activities: Financing can be used for any affordable housing purpose in accordance with an approved Indian Housing Plan.

Additional Information:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/fundingprogram#IHBG

US Amy Corps of Engineers (USACE)

Program Name: Continuing Authorities Program (CAP)

Purpose: Plan, design, and construct certain flood risk management and navigation improvements without specific congressional authorization. The basic objective of this program is to allow the Corps to respond more quickly to problems or needs where the apparent project scope and costs are small.

Eligible Applicants: State, Local, and Tribal Governments and ANCSA Corporations.

Funding Range: The amount of Federal participation is limited by Congress, and varies for each individual authority, however it is typically $5 million Federal, cost shared 65% Federal, 35% Non-Federal.

Program Activities: Several authorities exist under CAP which allow the Corps to assist communities with aquatic ecosystem, flood damage reduction, small navigation, and emergency streambank and shoreline protection projects. An example of the type of work supported by this program is the construction of a small revetment at Shishmaref to reduce risks of coastal erosion.

Additional Information:
http://planning.usace.army.mil/toolbox/agree.cfm?Id=229&Option=Continuing%20Authorities%20Program%20(CAP)&List=Process

Program Name: International and Interagency Support Services

Purpose: Planning, design, and/or construction for others.

Eligible Applicants: Federal State, Local, and Tribal Governments.

Funding Range: No per-project limit, all costs are born by the supported entity.

Program Activities: Interagency and International Services (IIS) is the U.S. Army Corps of Engineers (Corps) program providing technical assistance to non-Department of Defense (DoD) federal agencies, state and local governments, tribal nations, private U.S. firms, international organizations, and foreign governments. Most IIS work is funded on a reimbursable basis. The Corps provides engineering and construction services, environmental restoration and management services, research and development assistance, management of water and land related natural resources, relief and recovery work, and other management and technical services. An example of the type of work provided by this 100% stakeholder-funded program is the initiation of an adaptation study for Denali Commission looking at protect in place versus relocation for 31 communities identified by the GAO.

Additional Information:
http://www.usace.army.mil/Missions/MilitaryMissions/InteragencyInternationalSupport.aspx

Program Name: Planning Assistance to States

Purpose: This program permits the Corps to use its technical planning expertise to supplement and support state and Indian tribe efforts to undertake broad, statewide, comprehensive water resources planning. Upon request, the Corps will cooperate with a state or tribe in the preparation of plans for the development, use and conservation of water and related land resources located within the state or tribal boundaries.

Eligible Applicants: State, Local, and Tribal Governments and ANCSA Corporations.

Funding Range: Cost shared at 50 percent federal, 50 percent non-federal. Limited to $2 million per state or tribe annually. Individual studies generally range from $25,000 to $100,000.

Program Activities: Provides assistance to states, local governments, tribes and other non-federal entities for preparation of comprehensive plans for development and conservation of water and related land

resources. Studies are planning level of detail; they do not include detailed design for project construction.

Additional Information:
http://www.poa.usace.army.mil/Portals/34/docs/civilworks/CAP/Section22PlanningAssistancetoStatesandTribes.pdf (note: each Corps District has information about this program on their website).

Program Name: Tribal Partnership Program

Purpose: Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, to study and determine the feasibility of carrying out projects that will substantially benefit Indian tribes.

Eligible Applicants: Tribal Governments and ANCSA Corporations.

Funding Range: No per-project limit, cost shared based on project purpose.

Program Activities: The U.S. Army Corps of Engineers can conduct studies that will substantially benefit Indian tribes. Topics that could be studied include flood damage reduction, environmental restoration and protection, preservation of natural and cultural resources, and, other projects the Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, determines to be appropriate. This program provides an opportunity to assist with water resources projects that address economic, environmental and cultural resources needs.

Additional Information: http://www.usace.army.mil/Missions/CivilWorks/TribalNations.aspx

US Department of Agriculture (USDA)

Program Name: Business and Industry Loan Guarantee

Purpose: Can assist rural business with construction, repairs, equipment, machinery, inventory and supplies.

Eligible Applicants: For-profit businesses, Nonprofits and cooperatives, Federally-recognized Tribes, Public bodies and Individuals in rural areas of 50,000 people or less.

Funding Range: $5 – $10 million loan limit with certain exceptions.

Program Activities: Eligible activities include but are not limited to: (1) business conversion, enlargement, repair, modernization, or development; (2) purchase and development of land, easements, rights-of-way, buildings, or facilities; (3) purchase of equipment, leasehold improvements, machinery, supplies, or inventory; (4) debt refinancing when new jobs will be created and other conditions are met;

(5) business and industrial acquisitions when the loan will keep the business from closing and/or save or create jobs.

Additional Information: http://www.rd.usda.gov/programs-services/business-industry-loan-guarantees/ak

Program Name: Community Facilities Loans and Grants

Purpose: Finance essential rural community facilities.

Eligible Applicants: Public bodies, non-profits, Tribes.

Funding Range: Grants are limited to 75% of project cost but average about $30,000 due to limitation of funding. No loan limit.

Program Activities: Funds can be used to purchase, construct, and / or improve essential community facilities, purchase equipment and pay related project expenses.

Additional Information: http://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program/ak

Program Name: Electric Loans

Purpose: Build and repair electric infrastructure.

Eligible Applicants: Electric co-ops and other utilities (primarily).

Funding Range: No loan limit.

Program Activities: Funds may be used to finance electric infrastructure for: maintenance; upgrades; expansion; replacement of distribution, sub transmission and headquarters (service and warehouse) facilities; energy efficiency; and renewable energy systems.

Additional Information: http://www.rd.usda.gov/programs-services/electric-infrastructure-loan-loan-guarantee-program

Program Name: Rural Business Development Grant

Purpose: Facilitate the development of small and emerging business.

Eligible Applicants: Public bodies, non-profits and tribes.

Funding Range: $50,000 - 100,000 maximum grant (depending on activity type).

Program Activities: Congress historically has mandated a portion of this program's funding specifically for Federally Recognized Tribes.

Additional Information: http://www.rd.usda.gov/programs-services/rural-business-development-grants/ak

Program Name: Rural Energy for America Loans and Grants

Purpose: Purchase or install renewable energy systems or make energy efficiency improvements.

Eligible Applicants: Agricultural producers and rural small businesses.

Funding Range: Loan guarantees to $25M; Grants to $250,000 for energy efficiency improvements or $500,000 for renewable energy systems.

Program Activities: Funds may be used for the purchase, installation and construction of renewable energy systems, such as: Biomass (for example biodiesel and ethanol, anaerobic digesters, and solid fuels); Geothermal for electric generation or direct use; Hydropower below 30 megawatts; Hydrogen; Small and large wind generation; Small and large solar generation; Ocean (tidal, current, thermal) generation.

Funds may also be used for the purchase, installation and construction of energy efficiency improvements, such as: High efficiency heating, ventilation and air conditioning systems (HVAC); Insulation; Lighting; Cooling or refrigeration units; Doors and windows; Electric, solar or gravity pumps for sprinkler pivots; Switching from a diesel to electric irrigation motor; Replacement of energy-inefficient equipment.

Additional Information: http://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency/ak

Program Name: Sewer, Water, Solid Waste Loans and Grants

Purpose: Provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.

Eligible Applicants: This program assists qualified applicants that are not otherwise able to obtain commercial credit on reasonable terms. Eligible applicants include: Most State and local governmental entities, Private non-profits and Federally-recognized Tribes.

Funding Range: Grants are limited to 75% of project cost. No loan limit.

Program Activities: Funds may be used to finance the acquisition, construction or improvement of: drinking water sourcing, treatment, storage and distribution; sewer collection, transmission, treatment and disposal; solid waste collection, disposal and closure; and storm water collection, transmission and disposal.

Additional Information: http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program/ak

Program Name: Single Family Direct and Guaranteed Loans

Purpose: Finance the purchase of homes for rural residents.

Eligible Applicants: Low and very low income individuals in rural areas of 35,000 people or less.

Funding Range: The maximum loan amount an applicant may qualify for will depend on the applicant's repayment ability. The applicant's ability to repay a loan considers various factors such as income, debts, assets and the amount of payment assistance applicants may be eligible to receive. Regardless of repayment ability, applicants may never borrow more than the Area's Loan Limits (plus certain costs allowed to be financed) for the county in which the property is located.

Program Activities: Funds can be used to build, repair, renovate or relocate a home, or to purchase and prepare sites, including providing water and sewage facilities.

Additional Information:
Single Family Direct Loan: http://www.rd.usda.gov/programs-services/single-family-housing-direct-home-loans/ak
Single Family Guaranteed Loan: http://www.rd.usda.gov/programs-services/single-family-housing-guaranteed-loan-program/ak

Program Name: Single Family Repair Loans and Grants

Purpose: Finance repair of homes.

Eligible Applicants: Very low income homeowners in rural areas. Grants are only available to very-low income homeowners in rural areas that are at least 62 years old.

Funding Range: Loans up to $20,000 at 1%, grants up to $7,500. Loan grant combinations up to $27,500 in certain circumstances.

Program Activities: Loans may be used to repair, improve or modernize homes or remove health and safety hazards. Grants must be used to remove health and safety hazards.

Additional Information: http://www.rd.usda.gov/programs-services/single-family-housing-repair-loans-grants

Program Name: Telecom Loans

Purpose: This program provides financing for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.

Eligible Applicants: Most entities that provide telecommunications in qualified rural areas including: State and local governmental entities, Federally Recognized Tribes, Non-profits, including Cooperatives and limited dividend or mutual association and For-profit businesses (must be a corporation or limited liability company).

Funding Range: No loan limit.

Program Activities: Funds may be used to finance broadband capable telecommunications service: Improvements; Expansions; Construction; Acquisitions (in certain cases); Refinancing (in certain cases).

Additional Information: http://www.rd.usda.gov/programs-services/telecommunications-infrastructure-loans-loan-guarantees

APPENDIX E

Mitigation Tracking

- Mitigation Action Implementation Worksheet (Form 6-1)
- Mitigation Action Progress Report (Form 6-2)

MITIGATION ACTION IMPLEMENTATION WORKSHEET

Complete a mitigation action implementation worksheet for each identified mitigation action.

Mitigation Action / Project Title:	
Background / Issues:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits (Losses Avoided):	
Timeline:	
Priority:	
Worksheet Completed By:	*(Name / Department)*

MITIGATION ACTION PROGRESS REPORT

Progress Report Period:	*From Date:*	*To Date:*
Action / Project Title:		
Responsible Agency:		
Contact Name:		
Contact Phone / Email:	*Phone:*	*Email:*
Project Status:	❑ Project Completed ❑ Project Canceled ❑ Project on Schedule Anticipated completion date: _____ ❑ Project Delayed Explain:_____	

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period?

2. What obstacles, problems, or delays did the project encounter, if any?

3. If uncompleted, is the project still relevant? Should the project be changed or revised?

4. Other Comments:

Next Step: What is / are the next step(s) to be accomplished over the next reporting period?

APPENDIX F

Adoption Resolution

Levelock Village Council

Resolution No. _____
Tribal Hazard Mitigation Plan Adoption Resolution

WHEREAS, the Levelock Village hereafter "Tribe" is a federally recognized tribe; and

WHEREAS, the Levelock 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 Levelock Village 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 Levelock 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 Levelock 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:	**Title of Plan:**	**Date of Plan:**
Levelock Village	Levelock Village Tribal Hazard Mitigation Plan [2019 – 2024]	November 2019

Tribal Point of Contact: Sam Wassillie	**Address:** Levelock Tribal Council PO Box 70 Levelock, AK 99625
Title: Administrator	
Agency: Levelock Tribal Council	
Phone Number: 907-287-3030	**Email:** levelockadmin@bbna.com

State Reviewer (if applicable):	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**
Josh Vidmar Kate Skaggs John Schelling	CERC CERC Mitigation Planner FEMA Hazard Mitigation Planning Manager	04/30/2019 05/10/2019 05/13/2019
Date Received in FEMA Region 10	04/15/2019	
Plan Not Approved	05/13/2019	
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 19-25 App. A, PDF 93-116 App. B, PDF 137-194	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 21-25 App. A, PDF 93-116 App. B, PDF 137-194	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 23-25 App. B, PDF 137-194	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 25-26 Sec. 8, PDF 81-83	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 26	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 27-29 App. C, PDF 197-201	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 29	X	
ELEMENT A: REQUIRED REVISIONS			

1. **Standard Regulation Checklist** **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan** **(section and/or**	**Met**	**Not Met**
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 15-17 **Risk Assessment:** Sec. 5, PDF 31-35 **Earthquake**: Sec. 5, PDF 35-38 **Erosion:** Sec. 5, PDF 40-41 **Extreme Cold:** Sec. 5, PDF 41-42 **Flood:** Sec. 5, PDF 43-44 **Severe Wind:** Sec. 5, PDF 44-46 **Sev. Winter Weather:** Sec. 5, PDF 47-48 **Volcano:** Sec. 5, PDF 49-50 **Wildfire:** Sec. 5, PDF 51-55 **Maps:** Figures, PDF 87-89	X	
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 38-39 **Erosion:** Sec. 5, PDF 40-41 **Extreme Cold:** Sec. 5, PDF 42-43 **Flood:** Sec. 5, PDF 44 **Severe Wind:** Sec. 5, PDF 46-47 **Sev. Winter Weather:** Sec. 5, PDF 48-49 **Volcano:** Sec. 5, PDF 51 **Wildfire:** Sec. 5, PDF 55-56	X	

1. **Standard Regulation Checklist** **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan** **(section and/or**	**Met**	**Not Met**
B3. Does the plan include a description of each identified hazard's impact as well as an overall summary of the vulnerability of the tribal planning area? [44 CFR § 201.7(c)(2)(ii)]	**Earthquake**: Sec. 5, PDF 35-39 **Erosion:** Sec. 5, PDF 40-41 **Extreme Cold:** Sec. 5, PDF 41-43 **Flood:** Sec. 5, PDF 43-44 **Severe Wind:** Sec. 5, PDF 44-47 **Sev. Winter Weather:** Sec. 5, PDF 47-49 **Volcano:** Sec. 5, PDF 49-51 **Wildfire:** Sec. 5, PDF 51-56 **Community Assets:** Sec. 5.2, PDF 56-58 **Risk Analysis:** Sec. 5.3, PDF 58-64 **Vulnerability:** Sec. 5.4, PDF 65	X	
ELEMENT B: REQUIRED REVISIONS			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan include a discussion of the tribal government's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including an evaluation of tribal laws and regulations related to hazard mitigation as well as to development in hazard-prone areas? [44 CFR §§ 201.7(c)(3) and 201.7(c)(3)(iv)]	Sec. 6.1, PDF 67-69		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 69-70 App. D, PDF 205-246	X	
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 71	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 75-76 App. A, PDF 121-129		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 71-72 Sec. 6.5, PDF 73-76 App. A, PDF 121-129	X	

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
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 77 App. E, PDF 249-251	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 73-76 Sec. 6.7, PDF 77 App. E, PDF 249-251	X	
ELEMENT C: REQUIRED REVISIONS **Element C1.** The plan does not describe how the existing capabilities can be expanded upon to further address mitigation. If they cannot, please state this. Capabilities is any network of people, planning tool or process, partnership, budget, or anything else that provides support to the Native Village. **Element C4.** Mitigation actions are not presented for the identified hazards within the plan. While there are some in Appendix A that address all hazards, none that were mitigation-focused and specific to each hazard were selected to be part of the Mitigation Strategy, and the table of actions in Section 6.5. To meet this requirement, please help ensure that either actions are provided or a rationale as to why they were excluded.			
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			
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 79	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 79 App. F, PDF 255	X	
ELEMENT E: REQUIRED REVISIONS			

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.

Element B: Hazard Identification and Risk Assessment

Plan Strengths

- Table 5-13 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.

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 are not very specific, or seem incomplete. For example, "Identify and improve the airport." Does this mean identify issues at the airport? How do these issues relate back to the mitigation plan? Consider expanding on these to make them more specific and detailed.
- 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.

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.