

# Alaska Tribal Resilience Learning Network



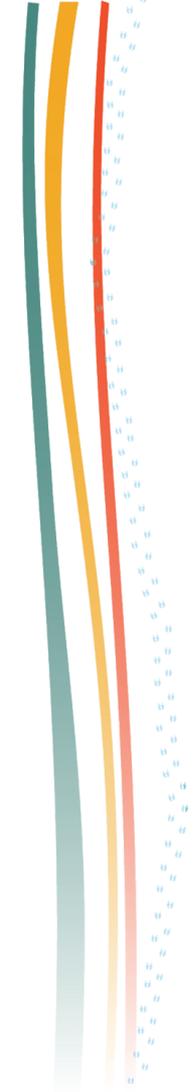
## Welcome to the Alaska Tribal Resilience Learning Network

October 20th, 2021



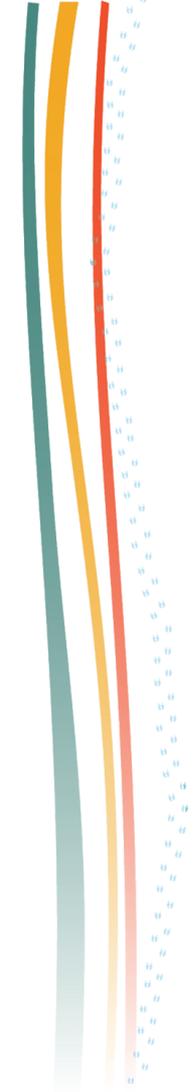
International Arctic  
Research Center





## Cat. 2: Aleut Community of St. Paul Island *Data Analysis and Product Development: Climate Adaptation Planning*

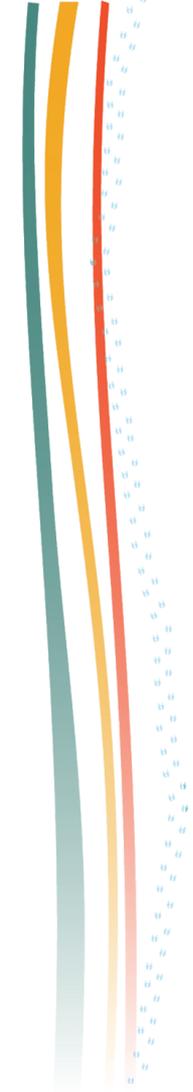
- This project addresses the need for Alaska Native Tribes and rural communities to properly assess and measure the impact of environmental changes on their communities. The goal of the project is to develop an adaptation plan for St. Paul Island, including vulnerability assessments where needed and data analysis of existing data to address extreme events and harmful environmental trends impacting our resources, economies, infrastructure, human health and welfare. Additionally, deliverables will be shared broadly with other Alaskan Tribes.



# Chevak Native Village

## *Permafrost Vulnerability Assessment*

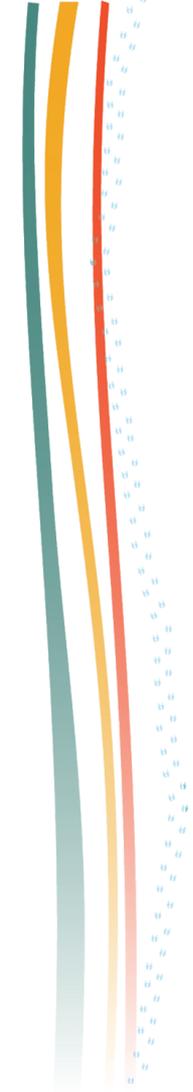
- Chevak is a Yup'ik community of 1,014 residents located in the Yukon Kuskokwim Delta on a bluff that is subject to the rapid erosion of the Ninglikfak River. Rapid erosion of the bluff and permafrost degradation throughout the community threatens homes, power lines, and subsistence practices. Chevak will develop a permafrost vulnerability assessment to predict and address expected severe environmental impacts in the community. This project will increase Chevak's capacity to develop recommendations for near-term actions and inform long-term planning to protect the community. This project is a critical step in Chevak's efforts to protect their people, lives, livelihoods, and cultures.



## Chickaloon Native Village

### *Nay'dini'aa Na' Kayax U'el 'stestniic: Starting to be Aware of Vulnerability Project*

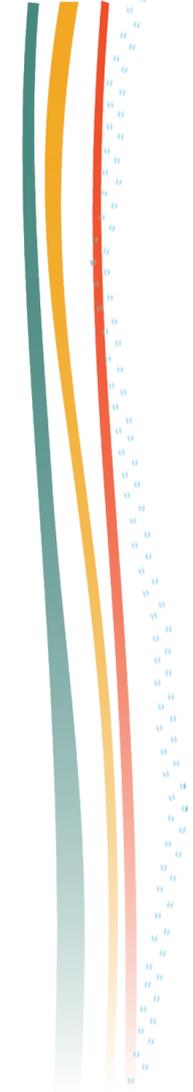
- Chickaloon Native Village will develop a Vulnerability Assessment (VA) that identifies and prioritizes Tribal assets and includes maps and supporting documentation in the forms of traditional knowledge and scientific data. The VA will also identify asset exposure risks, sensitivity, and adaptive capacity through interviews with culture-bearers and community members, literature review, data analysis, mapping, and numerous meetings. The process will be guided by a Tribal Climate Advisory Team consisting of Tribal citizens and Western scientists. The resulting VA will benefit multiple Tribes and communities in Southcentral Alaska.



# Chignik Bay Tribal Council

## *Climate Resiliency Action Plan*

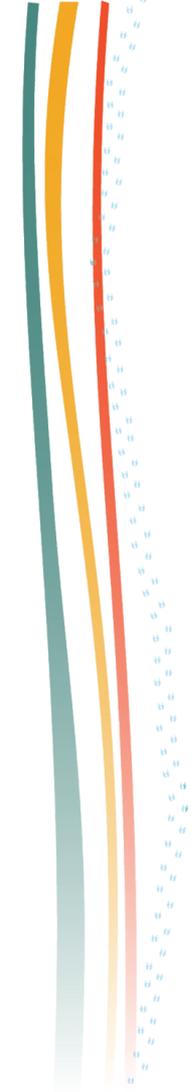
- The community of Chignik Bay is located on the south shore of the Pacific side of the Alaska Peninsula. This project will combine and summarize the findings of past and current studies and/or data collections related to the climate, erosion, and flooding in our community, as well as identify important data gaps in currently available data. At risk commercial and residential infrastructure will be identified and mitigation strategies will be developed along with a high-level cost analysis for each strategy. All information collected, community goals, recommendations and next steps will be presented in a 'Climate Resiliency Action Plan' for Chignik Bay.



# Huslia Village

## *Riverine Erosion Assessment*

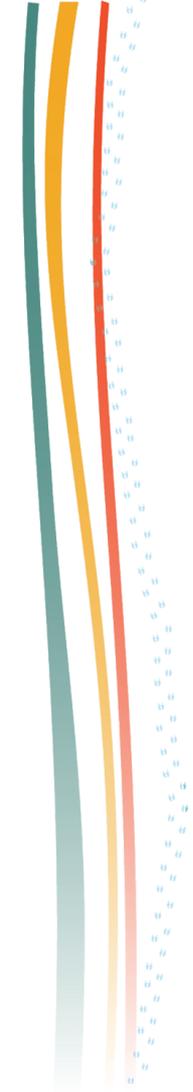
- Erosion poses an immediate and dire threat to Huslia Village's community life, health and safety. Huslia Village will develop a comprehensive riverine erosion assessment. The assessment will increase the community's capacity to complete near- and long-term planning to protect Huslia Village. This project will create scientific information and data on the magnitude and timing of the erosion threat to the community, which is required by state and federal decision makers. This scientific information and data will enable Huslia Village to create erosion mitigation strategies, near- and long-term strategic plans, and secure funding to implement solutions (e.g. move buildings).



# Kasigluk Traditional Elders Council (Native Village of Kasigluk)

## *Permafrost Vulnerability Assessment*

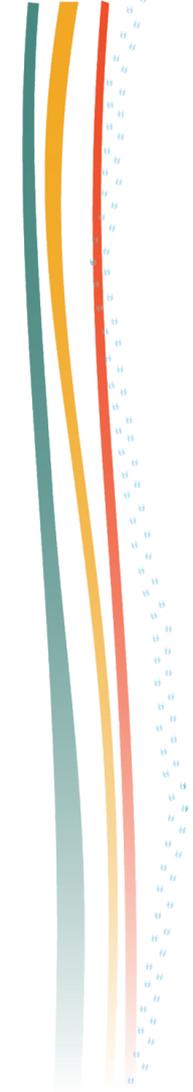
- Kasigluk, Alaska is a Yup'ik community of 627 residents located on the Johnson River in the Kuskokwim River Delta. Permafrost degradation, flooding, and erosion threaten homes, businesses, and boardwalks. Due to the severity of the threats, the Native Village of Kasigluk is unsure if the community will be able to remain in their current location. The Village will develop a permafrost vulnerability assessment to predict and address expected severe environmental impacts in the community. This project will increase the Village's capacity to adapt to climate change by developing community-specific data and informing the community's near-term actions and long-term planning efforts. This project is a critical step in their efforts to protect people, lives, livelihoods and culture.



## Knik Tribe

# *Climate Change Planning: Assessment of Paralytic Shellfish Toxins in Alaska Salmon*

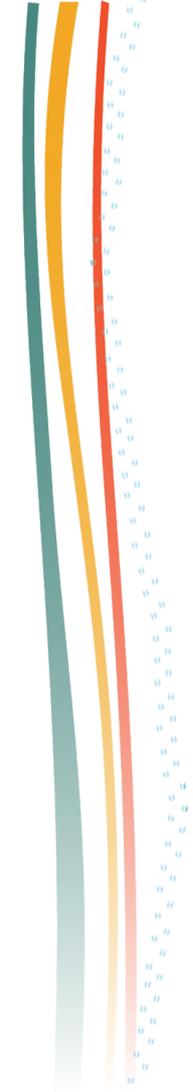
- Rising ocean temperatures in Alaska are resulting in life-threatening harmful algal blooms by a single-celled microscopic plant, *Alexandrium catenella*, in the Gulf of Alaska and Bering Sea. We are finding toxicity levels in bivalves (clams, mussels, scallops) exceeding federally safety levels exceeding 100 times. Recently, we began testing other species and found that Alaska salmon among other species, had detectable paralytic shellfish toxins in their tissues. This project is an assessment of the toxicity of Pacific salmon, an important commercial and subsistence resource in Alaska. The data from this project will be used by members of multiple coastal Tribes in Alaska and public health agencies. There is a critical need to substantiate these findings.



# Native Village of Deering

## *Preliminary Engineering Report to Address Erosion Impacts*

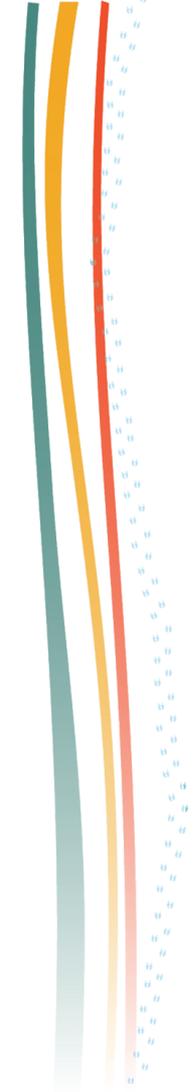
- This project addresses erosion impacts to Utica Road, which is used to access the airport, water withdrawal point, and subsistence areas. The road runs parallel to the Inmachuck River and is threatened by accelerating riverine erosion. This project will complete a Preliminary Engineering Report with recommendations for improving and protecting the road. After this project is completed, the Village will be able to access funding from state and federal agencies to construct our community's preferred alternative. This project will preserve access to water, subsistence, and benefit every resident in Deering, Alaska.



# Native Village of Eek

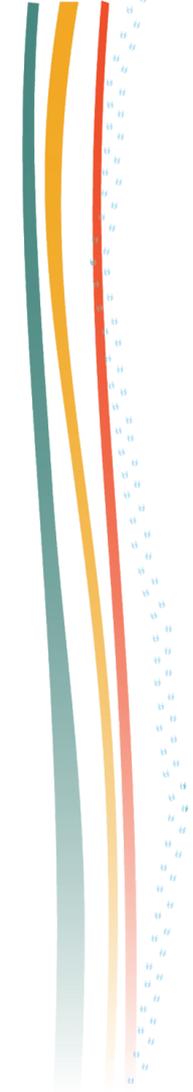
## *Permafrost Risk Assessment*

- This project will engage science and engineering consultants to complete a long-term permafrost assessment to forecast what infrastructure will be impacted, when, and support us in developing solutions to mitigate the threats. This project will form the foundation of the Village's long-term adaptation plan, which will guide efforts to protect the safety, security, and sustainability of our community. It will benefit 100% of the residents in the small, remote, Tribal community.



# Ekuk Village Council (Native Village of Ekuk) *Beach Erosion Protection Feasibility Study*

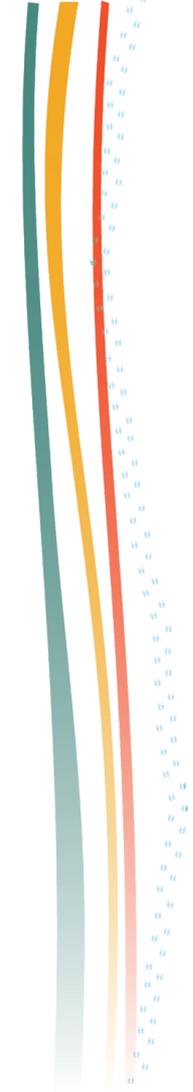
- Ekuk, Alaska has a deep history of fishing salmon from the Village's beaches. Salmon fishing is central to the Village's subsistence practices, cultural identity, and economic activity. The beach and bluff are critical community infrastructure, where they gain access to the water. Today, however, the Village's fishing practices are in jeopardy due to accelerating coastal erosion and flooding of the Ekuk beach. The Village of Ekuk will complete a feasibility study to evaluate mitigation strategies to address erosion along the beach. The study will evaluate historic and predicted erosion rates, engineering and environmental considerations, cultural and economic impacts, mitigation alternatives, and provide project cost estimates.



# Native Village of Kongiganak

## *Permafrost Vulnerability Assessment*

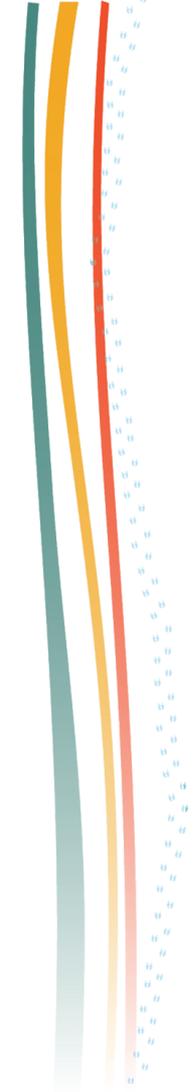
- The Native Village of Kongiganak is a traditional Yup'ik community in Southwest Alaska located about 80 miles South of Bethel and approximately three miles from the Bering Sea. Critical community infrastructure including homes, boardwalks, and the bridge to the landfill are imminently threatened by erosion, permafrost degradation, and flooding. The Native Village of Kongiganak will develop a permafrost vulnerability assessment to predict and address expected severe permafrost degradation impacts in the community. The project will increase the Native Village of Kongiganak's capacity to develop recommendations for near-term actions and inform long-term planning to protect the community. This project is a critical step in the Native Village of Kongiganak's efforts to protect the people, lives, livelihoods, and cultures.



# Native Village of Kwigillingok

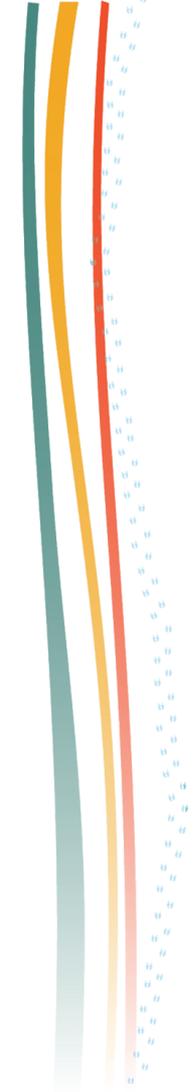
## *Riverine Erosion Risk Assessment*

- Kwigillingok, Alaska is a Yup'ik community of 374 people located on the Western shore of the Kuskokwim Bay near the mouth of the Kuskokwim River. Severe shoreline erosion threatens a critical community bridge and several homes. Due to the severity of the threats, the community is unsure if they will be able to remain in their current location. The Native Village of Kwigillingok will develop an erosion risk assessment to predict and address expected severe environmental impacts in the community. This project will increase Native Village of Kwigillingok's capacity to develop recommendations for near-term actions and inform long-term planning to protect the community. This project is a critical step in Native Village of Kwigillingok's efforts to protect their people, livelihoods, and culture.



# Native Village of Napakiak *Managed Retreat Plan and Coordinator*

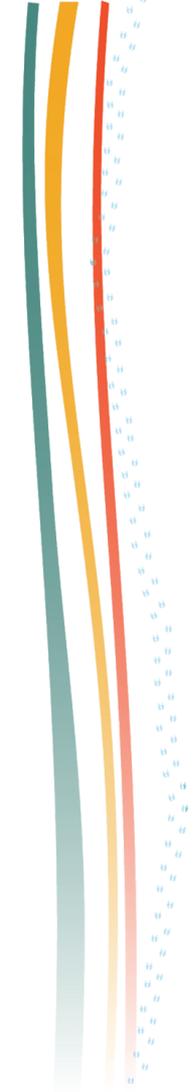
- Due to extremely aggressive erosion, the entire community of Napakiak is being forced to retreat to a safer location. Native Village of Napakiak's Managed Retreat Coordinator will plan and implement the managed retreat and train four key managed retreat staff members in grant management, financial management, land management, and other areas for the purpose of building capacity. The Coordinator will also engage Summit Consulting Services for technical support to update the Managed Retreat Plan based on the results of the current river morphology study.



# Native Village of Nunapitchuk IRA

## *Resilience Coordinator to Advance Adaptation*

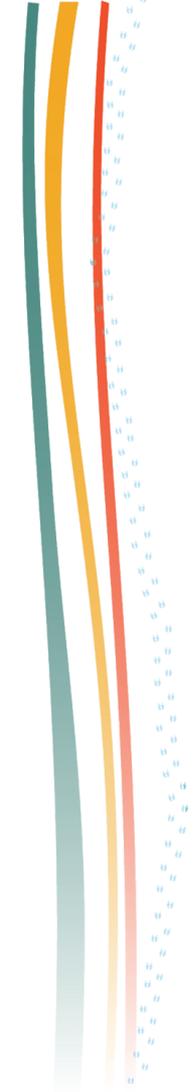
- The Native Village of Nunapitchuk is among the most vulnerable of communities to climate change in the United States. Rapidly warming temperatures have increased the rate of erosion and the frequency of flooding has resulted in a rapid loss of permafrost underlying the community. These environmental hazards threaten community infrastructure in the near-term and the Native Village of Nunapitchuk's way of life and ability to live in their current location long-term. This project will hire a Community Resilience Coordinator to coordinate the community's response to climate change impacts. Further, it will provide funding toward engaging an engineering contractor for technical assistance to advance top community climate adaptation priorities. This project protects community life, health and safety.



# Native Village of Shaktoolik

## *Coastal Resilience Planning and Design*

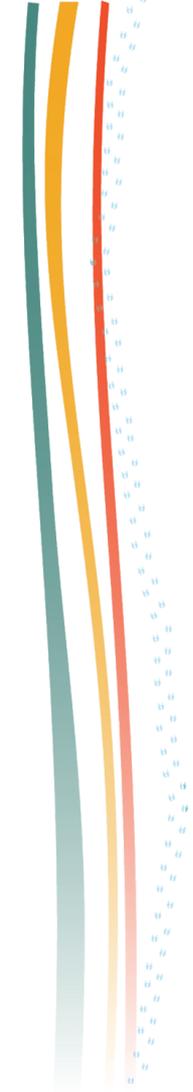
- Native Village of Shaktoolik will hold meetings with community leaders, travel to interagency planning meetings, and have their engineering consultant support technical components of planning and engineering design. This project will create a long-term resilience plan with prioritized projects for their solutions and begin engineering design and planning for the Native Village of Shaktoolik's highest priority solution.



# Native Village of Shishmaref

## *Site Expansion Planning*

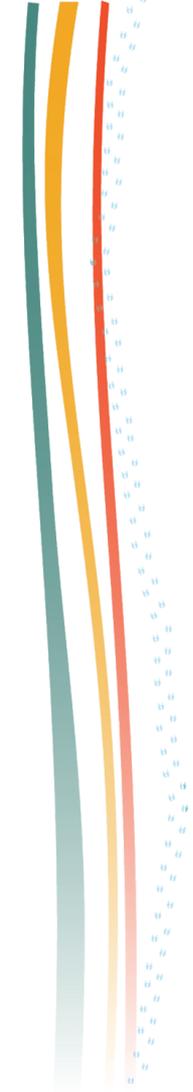
- A November 2020 storm caused \$6.5 million in damage to our sanitation road. In some areas, the road and the land beneath it were eliminated. This project will provide the community with a Local Coordinator who will collaborate with State and Federal agencies on behalf of the community. The Local Coordinator will maintain and coordinate grant strategies and submit quarterly reports in all progress to ensure the community continues to pursue and maintain protection strategies.



# Qawalangin Tribe of Unalaska

## *Climate Vulnerability Assessment*

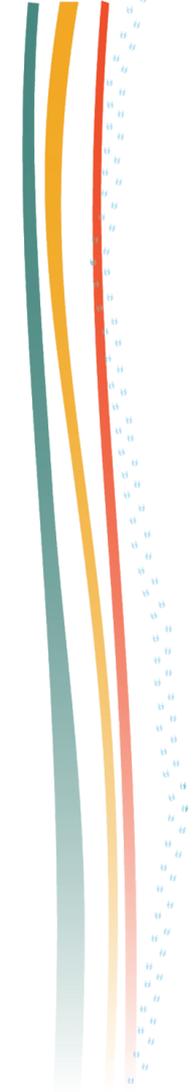
- The Qawalangin Tribe will continue to build their Climate Resilience program by preparing a Climate Vulnerability Assessment of key priority areas as identified through the process of updating their Climate Adaptation Plan. The Tribe will evaluate the likelihood of impact or hazard to each of these priority resources (exposure), how these hazards may affect the resource and how the resource might respond (sensitivity), and the ability of the community to deal with these potential impacts (adaptive capacity). Considering these components will allow the Tribe to complete a Climate Vulnerability Assessment that will be an important tool in planning for potential future actions that might help mitigate these impacts and increase Climate Resilience as a whole community.



# Seldovia Village Tribe

## *Visualizing Climate Change*

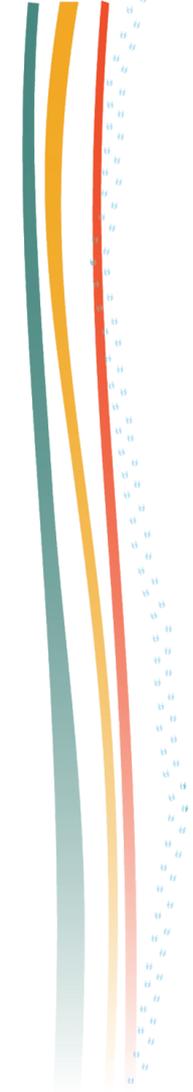
- One of the SVT's ultimate goals is to foster regional partnerships with all the neighboring entities. SVT will share all documents and data from this project with the bordering Tribes of Port Graham and Nanwalek. All the habitats to be defined, and the terrestrial resources associated with those habitats, share boundaries and natural ranges with all Tribal entities and municipalities on the lower Kenai Peninsula. These communities all share the resources that sustain them, and SVT intends to share valuable data in the ongoing effort to manage those resources in the best possible way. Additionally, landowners like the Department of Natural Resources will also benefit from this project as their lands are adjacent to the native-owned lands.



# Village of Chefnak

## *Environmental Threat Planning and Capacity Building*

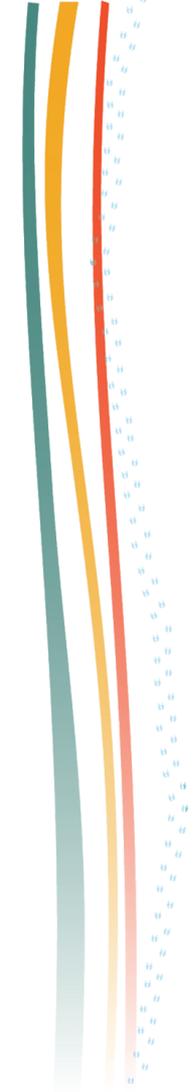
- The community of Chefnak is facing increasing impacts from permafrost degradation, erosion, and flooding. Chefnak are addressing immediate threats and planning a new safe, subdivision site to which the community will replace and relocate homes and infrastructure. To increase community capacity to achieve their vision for a safe and healthy community, Chefnak will hire an Environmental Threat Coordinator position at the Tribal office and engage the engineering consultant to provide technical support. This project benefits all residents in the small, financially disadvantaged community.



# Village of Kotlik

## *Adaptation Strategy Development*

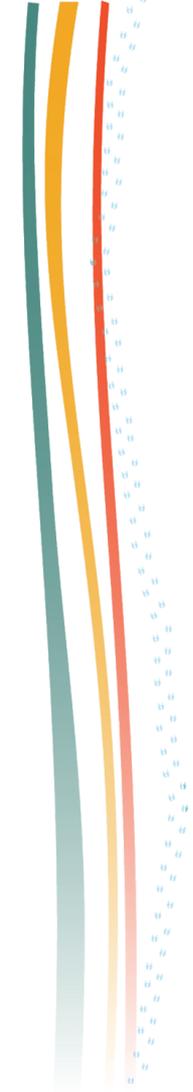
- This project will conduct the following activities: 1) Build the capacity of the Kotlik Resilience Coordinator and 2) Contract with CRW Engineering for technical and planning assistance. This project will immediately benefit the entire community of 655 people and address urgent threats to the health of the people and the sustainability of the community.



# Kodiak Area Native Association

## *Kodiak Tribal Climate Action Plan*

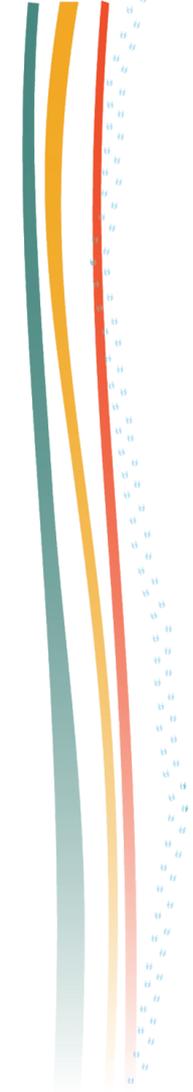
- KANA proposes to support the development of Kodiak Tribal Climate Adaptation Plan (The Plan) and Kodiak Tribal Climate Adaptation Template (The Template) under Category 2: Adaptation Planning. The Plan will document climate hazards for Kodiak Tribes, assess vulnerabilities of key concerns, outline climate change data sets and monitoring efforts, and review the ways to reduce climate-related risks as a regional. The Template will be used by Kodiak Tribes, and customized to meet their individual needs and community conditions. KANA will work with Kodiak Tribes to identify and prioritize current and future challenges that our region and people encounter, determine which environmental areas have the highest probability of impact, and establish monitoring and mitigation plans to address them.



## Tanana Chiefs Conference

### *Mainstreaming Climate Change Resilience in Village Planning and Service Provision to Villages*

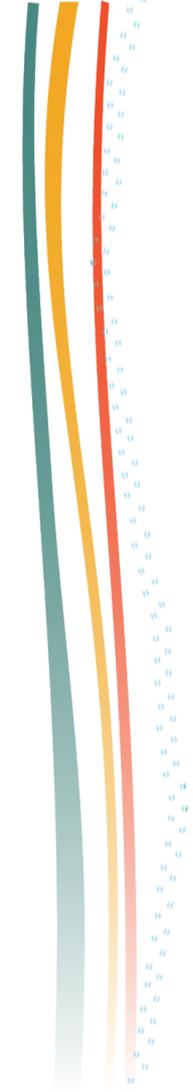
- Three to seven tribes in the Tanana Chiefs Conference region of Interior Alaska will be selected to mainstream climate change into their village plans. Other tribes are expected to benefit indirectly by participating in monthly phone calls regarding the planning update process. Still other indirect benefits come to tribes whose citizens are on the Climate Change Task Force that this project supports. Finally, we expect all 42 tribal villages in the region to have some benefit from TCC's mainstreaming climate change concerns into the services it provides, including housing construction.



# Yukon River Intertribal Watershed Council

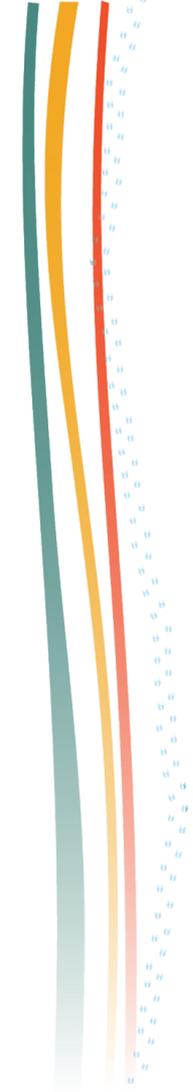
## *Creating Climate Change Water Adaptation and Action Plan for the Yukon River Watershed*

- Climate change is impacting important water resources that rural Alaska Native Tribes depend on for drinking water, household use, and subsistence. A series of Water Resilience Workshops would be convened in all major Alaskan regions (Yupik, Koyukon, Athabascan, Gwich'in) of the Yukon River Watershed involving Alaska Native leaders, Tribal planners, Tribal environmental staff and interested youth and elders. A Water Adaptation and Action Plan will be drafted from these Workshops that will identify opportunities in water governance as well as on-the-ground actions. This project will address impacts of climate change to water resources through tribal planning efforts to explore strategies, and provide actionable ways forward to elevate water protection.



## Category 4: Hoonah Indian Association *Capacity Building to Sustain Tribal Citizen Voices in Fisheries Management*

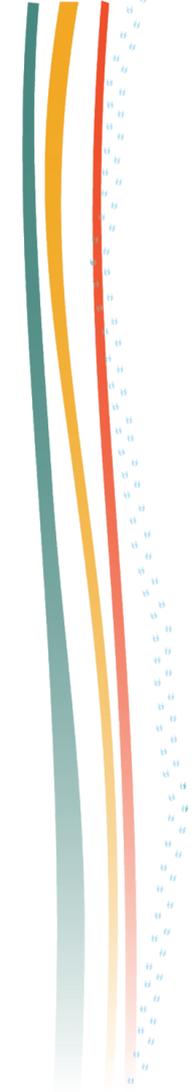
- This project advances tribal citizens and HIA to the next steps of fisheries management by addressing the historic inequity of Indigenous peoples in marine science and ocean and coastal management planning through two key strategies: developing culturally relevant career technical education pathways in fisheries management and supporting grassroots fisheries management in Hoonah and across the state of Alaska. The objectives listed in this project build tribal government and tribal citizen capacity and will enable tribal citizens and HIA to better engage with the fisheries management regulatory process in the State of Alaska.



## Native Village of Diomede

### *Monitoring and Assessment of Changing Ocean Conditions on Traditional Harvest of Bering Strait King Crabs*

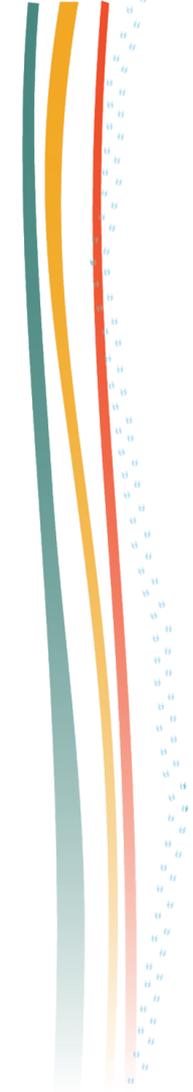
- The Native Village of Diomede (NVD) proposes to implement a robust environmental monitoring program to generate critical environmental data and information on changing ocean conditions that will be used to establish adaptation and mitigation strategies for traditional harvest of Bering Strait king crabs: *Paralithodes platypus* (blue king crab) and *Paralithodes brevipes* (Hanasaki crab or brown king crab). NVD has a vested interest in protecting traditional and subsistence natural resources and the health of tribal citizens in their traditional tribal territory. Bering Strait king crabs are a key subsistence food source for NVD tribal citizens. yet warming ocean conditions, changes in sea ice dynamics, and shifts in ocean chemistry may be contributing to the decline in subsistence catch off Little Diomede Island.



## Sitka Tribe

# *Klag Lake Limnology and Productivity Study*

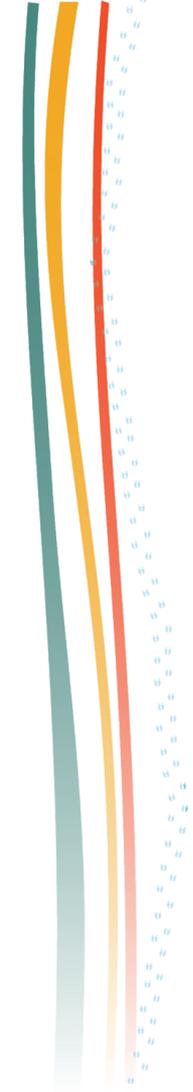
- The STA Klag Lake Limnology and Productivity Study will assess the vulnerability of sockeye salmon by developing and implementing monitoring protocols of zooplankton and freshwater environmental parameters of Klag Lake on Chichagof Island in Southeast Alaska. From May to October STA will inventory zooplankton (genus, abundance, and density), once a month and temperature, dissolved oxygen, and euphotic zone depth biweekly at two locations on Klag Lake. This information, in combination with STA's 20-year ongoing stock escapement and in-season subsistence harvest data, will expand management knowledge and subsistence users' preparedness in an important system that is in decline. Trainings and protocols will be presented at the Southeast Environmental Conference for all Tribal partners.



## Yakutat Tlingit Tribe

### *Intertidal Shellfish Assessments to Inform Subsistence Harvest and Climate Change Adaptation Planning*

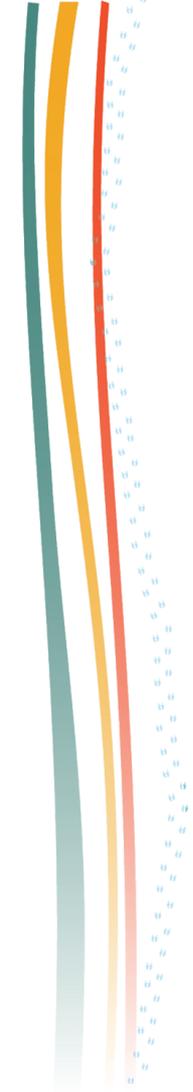
- The Yakutat Tlingit Tribe (YTT) proposes to expand upon its ongoing ocean acidification, water quality, harmful algal bloom (HAB), and Traditional Foods programs to include an intertidal ecosystem assessment of three beaches that are actively used for shellfish subsistence harvest near Yakutat. Through these efforts, the YTT will build internal capacity to assess shellfish population trends and develop a robust baseline monitoring program to inform subsistence harvest and climate adaptation planning.



## Category 4: Southeast Alaska Indigenous Transboundary Commission

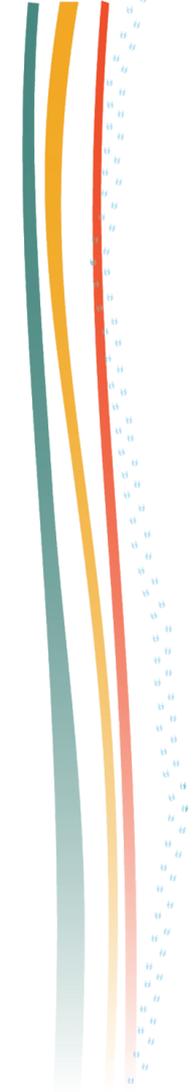
### *Southeast Alaska Ocean Fish Consumption Rates*

- Southeast Alaska Tribes and communities gather 80% of their foods from the surrounding waters. Water Quality Criteria (WQC) is set by Alaska to assure water is drinkable and fishable. The WQC for over 90 toxins are considered Human Health Criteria since they bioaccumulate in the seafoods. Climate change has increased the levels of these toxins. The WQC are based on estimates of the average fish consumption or value (FCV). Alaska's FCV is set at 6.5gpd. EPA recommends for subsistence populations the FCV be at 142.4gpd. EPA recommends that the FCV be based on local data. The FCV in Oregon and Washington was recently updated to 170gpd. Only 1 survey has been conducted in Alaska, and estimates a FCV of 250gpd. No surveys have been conducted in SE Alaska.



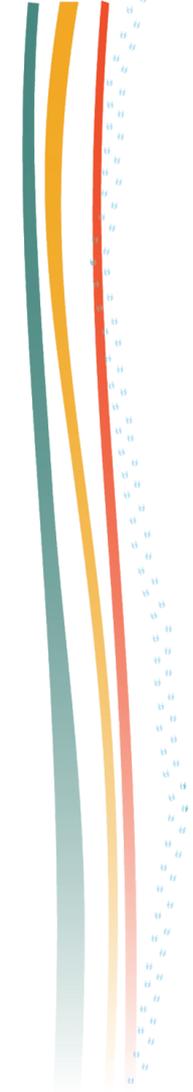
## Category 7: Chevak Native Village *Riverine Erosion Assessment*

- Chevak is a Yup'ik community of 1,104 residents located in the Yukon Kuskokwim Delta on a bluff that is subject to the rapid erosion of the Ninglikfak River. Several homes and community buildings are imminently threatened by erosion of the bluff and current mitigation measures are not enough to prevent future damages and keep residents safe. The tribe plans to develop a riverine erosion assessment to predict and address expected climate change impacts in the community. This project will increase the Native Village of Chevak's capacity to develop recommendations for near-term actions and inform long-term planning to protect their community. This project is also a critical step in the effort to protect the people, lives, livelihoods, and cultures of the Native Village of Chevak.



## Category 7: Chinik Eskimo Community *Resilience Coordinator for Adaptation Planning*

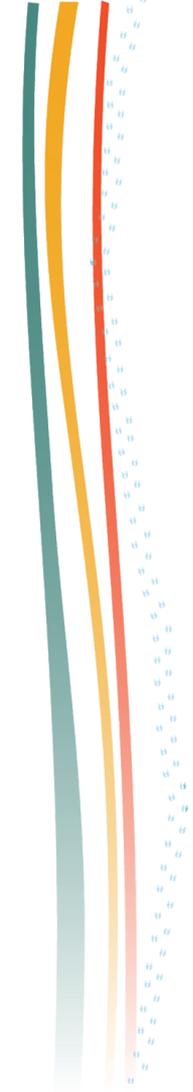
- Chinik Eskimo Community (CEC) is currently not safe. Due to increasingly severe flooding and erosion, the community of Golovin, AK must relocate all community infrastructure to a site of elevated land adjacent to the community. CEC will hire a full-time Resilience Coordinator that will focus on exclusively on coordinating efforts to protect the community infrastructure and the community. This project will build the Tribal capacity to plan for a safer and healthier future. The Resilience Coordinator will significantly advance adaptation planning and implementation. It will benefit every single member of the community as well as all Tribal programs, all community entities, as well as State and Federal partners.



# Kasigluk Traditional Elders Council (Native Village of Kasigluk)

## *Erosion Risk Assessment*

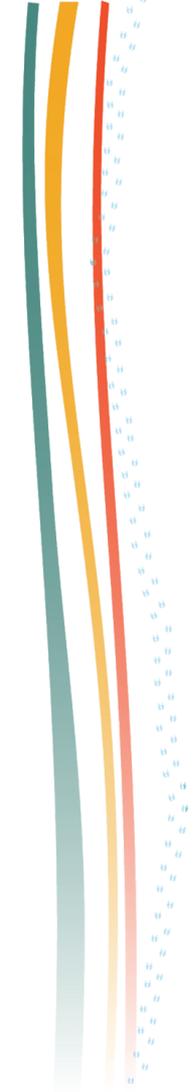
- Kasigluk, Alaska is a Yup'ik community of 627 residents located on the Johnson River in the Kuskokwim River Delta. Permafrost degradation, flooding, and erosion threatens homes, businesses, and boardwalks. Due to the severity of the threats, we are unsure if we will be able to remain in our current location. We request funding to develop a permafrost vulnerability assessment to predict and address expected severe environmental impacts in our community. This project will increase our capacity to adapt to climate change by developing community-specific data and informing our near-term actions and long-term planning efforts. This project is a critical step in our efforts to protect our people, lives, livelihoods, and culture.



# Native Village of Deering

## *Preliminary Engineering Report Data Collection*

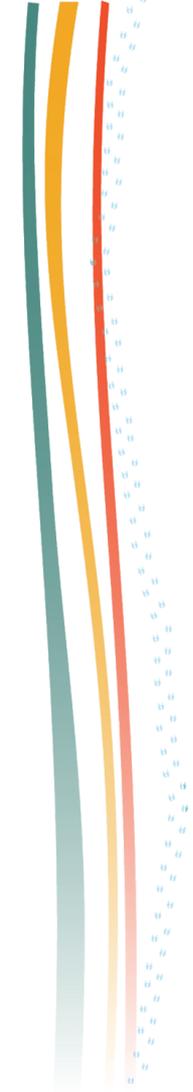
- This project addresses erosion impacts to Utica Road, which is used to access the airport, water withdrawal point, and subsistence areas. The road runs parallel to the Inmachuck River and is threatened by accelerating riverine erosion. Native Village of Deering plan to complete data collection and analysis to develop the best long-term solution to the erosion threat. The results of this project will inform the creation of a Preliminary Engineering Report (PER), that will provide recommendations for improving and protecting the road. After this project is completed, the Tribe will be able to access funding from state and federal agencies to construct the community's preferred alternative. This project will preserve access to water and subsistence resources and benefit every resident in Deering, AK.



# Native Village of Eek

## *Riverine Erosion and Flood Assessment*

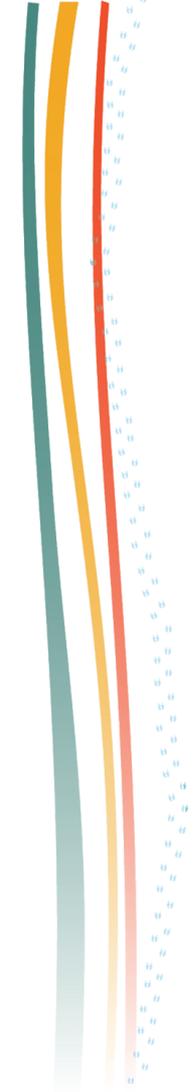
- This project will engage science and engineering consultants to complete a long-term erosion and flood assessment to forecast what infrastructure will be impacted, when, and support us in developing solutions to mitigate the threats. This project will form the foundation of our long-term adaptation plan, which will guide the community's effort to protect the safety, security, and sustainability of our community. It will benefit 100% of the residents in the small, remote, Tribal community.



# Native Village of Hamilton

## *Erosion Protection Final Design*

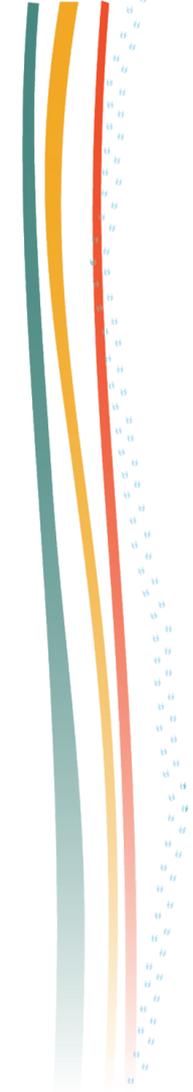
- Intensifying riverine erosion threatens the viability of the Native Village of Hamilton (NVH) in its current location. All infrastructure located along the riverbank is threatened including up to 120 structures in the long term. In order to protect the infrastructure and community, the NVH urgently needs to plan erosion mitigation measures. This project will contract with an engineering consultant to finalize the design of erosion and protection measures that will protect the community's infrastructure. This project builds upon a previous BIA award to the NVH to complete preliminary planning and schematic design. This project will immediately and directly benefit the health, life, and safety of NVH residents by building Tribal capacity to address erosion impacts.



# Native Village of Hooper Bay

## *Permafrost Risk Assessment*

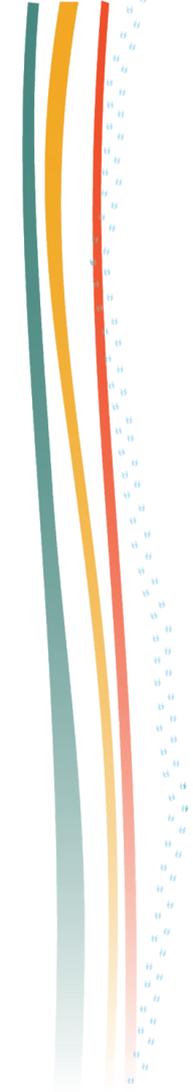
- This project will engage science and engineering consultants to complete a permafrost vulnerability assessment to forecast what infrastructure will be impacted, when, and support us in developing solutions to mitigate threats. This project will form the foundation of the community's long-term adaptation plan, which will guide their effort to protect the safety, security, and sustainability of the community. It will benefit 100% of the residents in the small, remote, Tribal community.



# Native Village of Kivalina

## *Erosion Protection Analysis and Design*

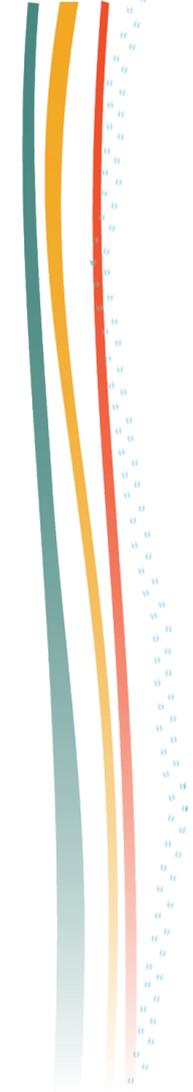
- This project will complete engineering planning and design to construct a rock sea wall to protect the community landfill from eroding into the Chukchi Sea. This project addresses a critical public health issue that benefits 100% of Tribal residents. The community is one of the most threatened by coastal hazards in all of Alaska.



# Native Village of Kongiganak

## *Riverine Erosion Assessment*

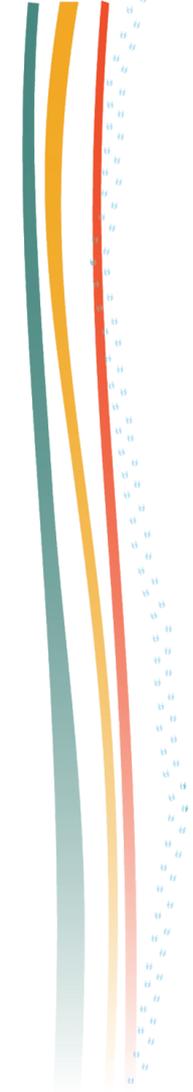
- The Native Village of Kongiganak is a traditional Yup'ik community in Southwest Alaska located about 80 miles south of Bethel and approximately three miles from the Bering Sea. Critical community infrastructure including homes, boardwalks, and the bridge to the landfill are imminently threatened by erosion, permafrost degradation, and flooding. Native Village of Kongiganak plans to develop a riverine erosion assessment to predict and address expected severe environmental impacts in the community. This project will increase their capacity to develop recommendations for near-term actions and inform long-term planning to protect the community. This project is a critical step in their efforts to protect the Village's people, lives, livelihoods, and cultures.



# Native Village of Kwigillingok

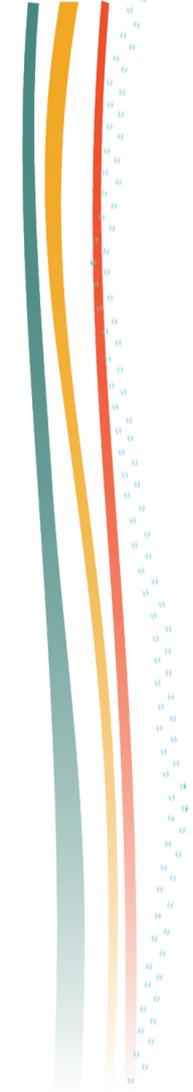
## *Preliminary Engineering Report and Hazard Mitigation Plan*

- Kwigillingok, Alaska is a Yup'ik community of 374 people located on the western shore of the Kuskokwim Bay near the mouth of the Kuskokwim River. Severe shoreline erosion threatens a critical community bridge and several homes. The project will 1) develop a preliminary engineering report to develop solutions to protect the bridge and 2) complete a Tribal Hazard Mitigation Plan to understand the environmental threats facing our community. This project will increase Tribal capacity to develop recommendations for near-term actions and inform long-term planning to protect our community. This project is a critical step in the community's efforts to protect their people, lives, livelihoods, and culture.



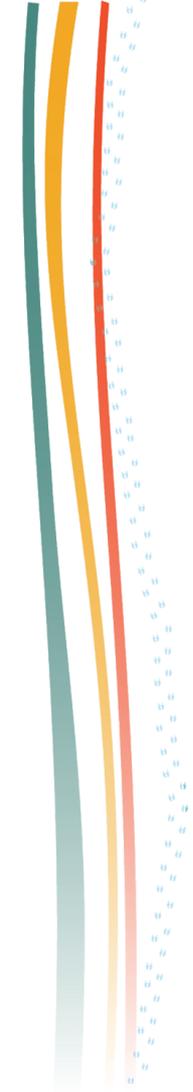
# Native Village of Kwinhagak (Quinhagak) *Threatened Infrastructure Structural Engineering Assessments*

- Subsidence due to permafrost degradation impacts virtually every piece of infrastructure in the community. It is the Native Village of Quinhagak's highest priority to address this threat. This project will address the most threatened community infrastructure – the multipurpose building and the Head Start facility – by completing structural engineering assessments of the buildings. The final report will assess the current condition of the building and recommend a long-term solution to protect or relocate infrastructure. This project will benefit all members of the community and develop long-term adaptation strategies for Quinhagak's highest resilience priorities.



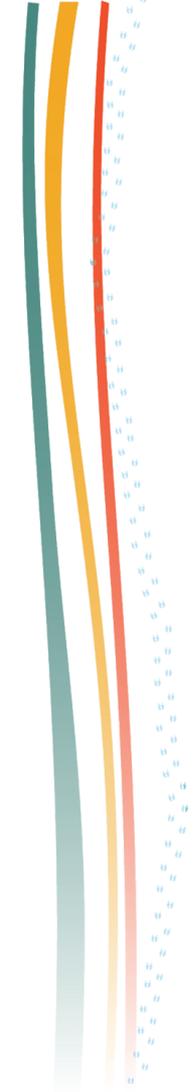
# Native Village of Nelson Lagoon *Relocation Site Suitability Assessment*

- The Tribal community of Nelson Lagoon may be forced to relocate to another distant site due to increasingly severe coastal erosion caused by climate change. The Native Village of Nelson Lagoon lost 90 feet of land in a November 2020 storm. All of their erosion monitoring stakes and the time-lapse camera used to monitor erosion were claimed by the ocean. This project will engage geotechnical, civil, and hydrogeological engineering experts to evaluate the potential habitability of three potential sites that the community could pursue for long-term relocation. All future planning will be based on the results of this project. All community residents and all Tribal programs benefit from this project.



## Native Village of Shaktoolik *Storm Surge Monitoring and Rock Source Investigation*

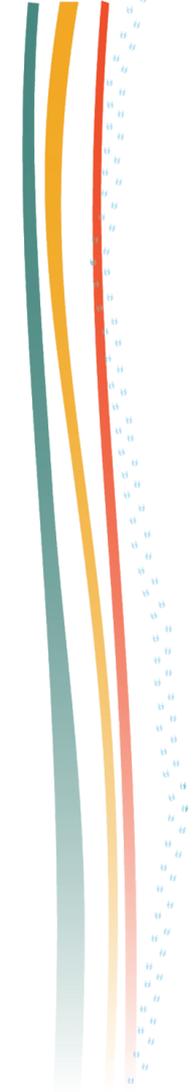
- This project will conduct an as-built survey of the Native Village of Shaktoolik's storm surge berm to monitor damages from storms, and engage a geologist to assess the feasibility of developing a local rock source, which the community could use to construct a rock sea wall. This project benefits 100% of Tribal members and all Tribal programs.



# Native Village of Shishmaref

## *Erosion Protection Design and Planning*

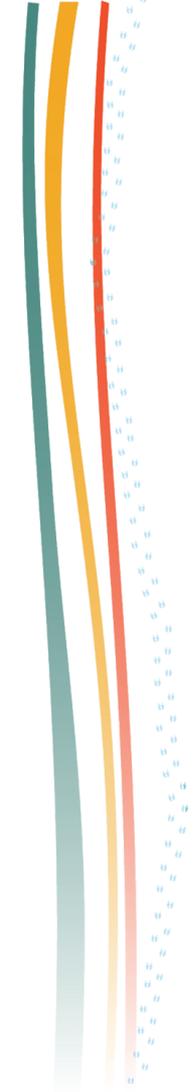
- A November 2020 storm caused \$6.5 million of damage to the Native Village of Shishmaref's sanitation road. In some areas, the road and the land beneath it were eliminated. This project will complete, design, planning, permitting, and analysis for a rock revetment structure to protect road and critical facility. If erosion and flooding continue, solid waste, hazardous waste, and sewage will be released into the water. This imminent threat to public health.



# Pilot Point Tribal Council

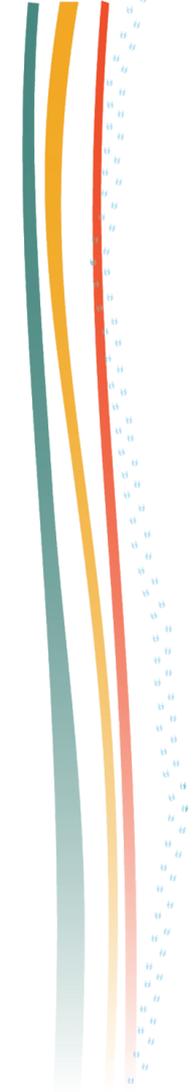
## *Coastal Erosion and Flood Study Protection*

- Coastal erosion and flooding threaten critical infrastructure essential to the economy, culture, and livelihoods of the communities of Pilot Point, Port Heiden, and Ugashik, Alaska. The community of Pilot Point has one "pseudo" natural harbor located in Dago Creek. Dago Creek is located 4 miles north of the community. This project will complete a study of the long-term coastal erosion and flooding impacts on existing infrastructures located at or near Dago Creek. This study will build upon historical erosion and flood data by engaging civil, structural, and coastal engineers to complete data collection, analysis, and generate a report that provides recommendations to sustain transportation infrastructure that is essential for the three Tribal communities.



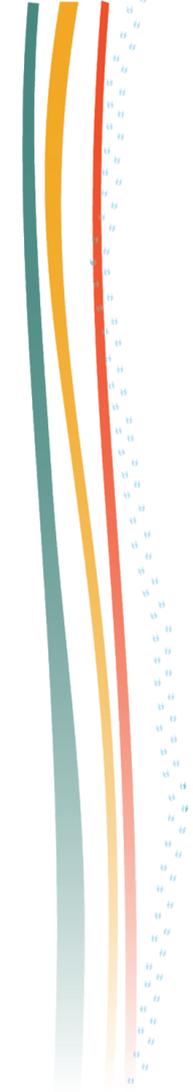
## Category 7: Village of Kotlik *Erosion Protection Final Design*

- This project will finalize the design of erosion protection at the community's landfill. The landfill is threatened by riverine erosion. If impacted, it could spill human and hazardous waste, contaminating Village of Kotlik's subsistence resources and drinking water. This project will benefit every resident in Kotlik and protect community health.



## Category 8: Qawalangin Tribe of Unalaska *Climate Resilience Internship*

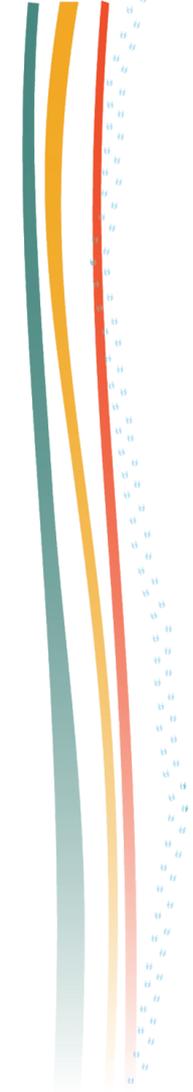
- The intern will work with the program managers to understand guiding Unangan values and the goals of each program and to identify future projects for collaboration to support climate resilience priorities across programs. The intern will also conduct youth outreach activities to encourage awareness of locally important climate impacts.



## Category 8: Yukon River Intertribal Watershed Council

### *Tribal Resilience Internship*

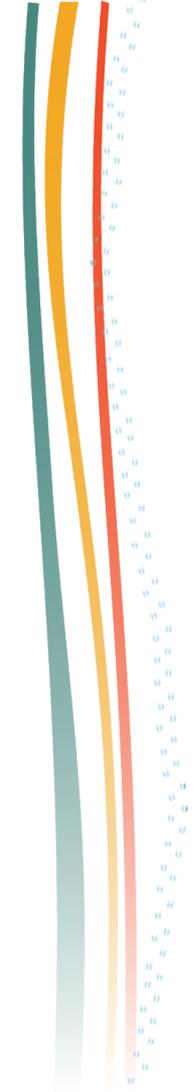
- This intern would be hired from YRITWC's partner organization, the University of Alaska's Alaska Native Science and Engineering Program (ANSEP). They would work as a Project Assistant on YRITWC's BIA TCRP Category 3 project, Creating Water Adaptation and Action Plans for the Yukon River Watershed, for two years. They would gain skills in environmental sampling, community-based monitoring, coordination/facilitation of workshops, in addition to travelling to rural regions and networking with Alaska Native leaders.



## Category 9: Hoonah Indian Association

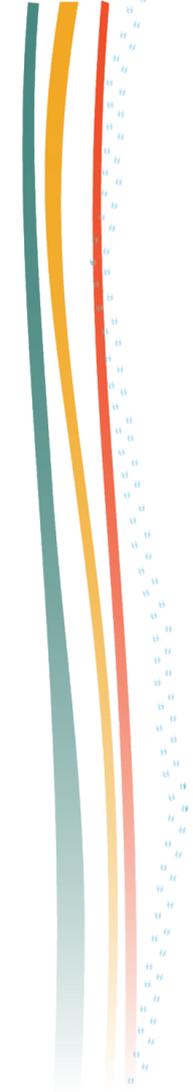
### *Establishing Youth Climate Stewardship in Hoonah, Alaska*

- Hoonah Indian Association's project follows recommended steps for building youth's ability to adapt to climate change and be stakeholders in the process. The project brings in new partners and leverages previous partnerships, as well as builds on existing programs and establishes some new programming for youth. This grant will result in products and new capacity that the Tribe can leverage into new opportunities, and increase the ability of their Tribal youth and citizens to cope with climate change in the community.



## Qawalangin Tribe of Unalaska *Youth Climate Mini-Camp Sessions*

- The Tribe will offer 2 "Climate Mini-Camp" sessions for youth prior to the annual Culture Camp, Camp Quangaayux. These sessions will focus on climate issues and resilience seen through a cultural lens. The Qawalangin Tribe respects their Elder's choice of subject matter, and hope to engage with 10-20 youth and two Elder mentors in each session.



## Cat. 9 Yukon River Intertribal Watershed Council *Sharing Climate and Watershed Education with Yukon River Tribal Youth*

- YRITWC will create two Climate & Watershed Education Activity Booklets in 54 Alaska Native villages to explore their watershed and learn about climate-related topics. Booklets will have education on watersheds, climate Traditional Knowledge, and activities to engage locally. 35% of the project will be climate-related and will have related careers. YRIWC aims to print 10,000 booklets, the same number of youth they hope to reach, ages 9-14 years old