



# Creating Shared Resiliency through the Chignik Subregional Watershed Plan

<https://chignikwatershed.com/>

(February 2025 Presentation)



*A community-first approach to climate resilience*



Alaska Coastal Cooperative

[akcoastal.org](http://akcoastal.org)



PAUL G. ALLEN  
FAMILY FOUNDATION







# Project Team Presenters



**Jeanette Carlson**  
Environmental Director  
Chignik Bay Tribal Council



**Sue Flensburg**  
CBTC Advisor  
Flensburg Consulting

***With project  
support from  
Agnew::Beck  
Consulting***

*This project has been funded in part by a Department of Environmental Conservation Alaska  
Clean Water Actions (ACWA) grant with support from the U.S. EPA.*



**Alaska Coastal Cooperative**

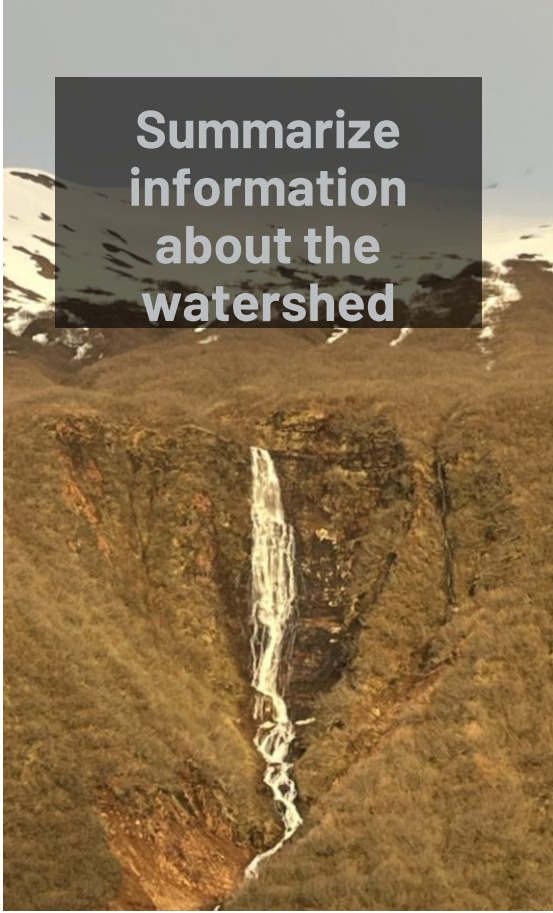
[akcoastal.org](http://akcoastal.org)



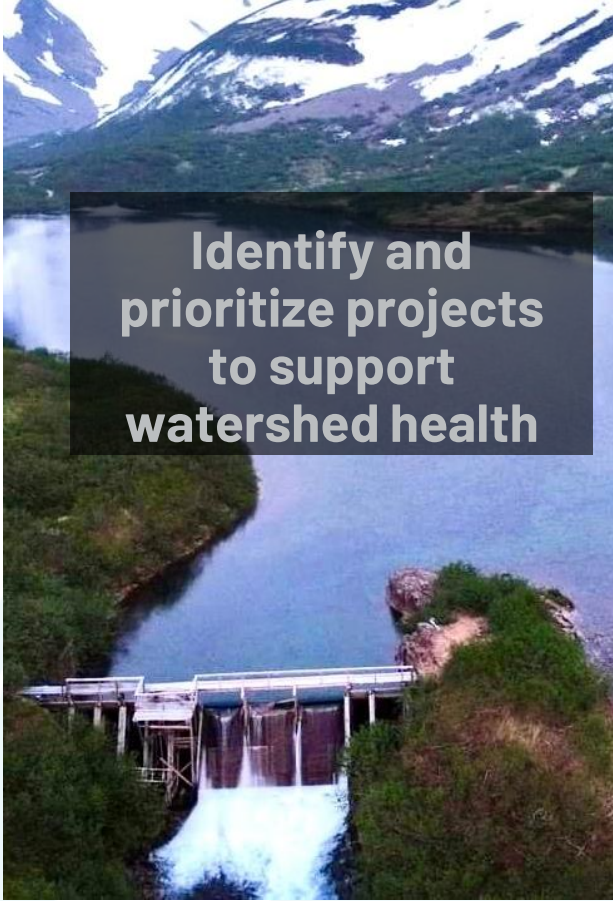
**PAUL G. ALLEN  
FAMILY FOUNDATION**




# Chignik Subregional Watershed Plan will...



Summarize  
information  
about the  
watershed



Identify and  
prioritize projects  
to support  
watershed health



Empower local  
management in  
protecting and  
promoting water  
resources in the  
subregion



# What is the timeline?

## June - Aug 2023

- Launch project
- Identify stakeholders
- Attend Chignik Climate Resiliency Symposium

## Aug - Oct 2023

- Inventory information, including traditional ecological knowledge
- Identify sources of known, historical, and suspected water quality threats

## Sept 2023 - June 2024

- Prepare watershed issues assessment with all findings to date
- Share and gather input at the 2024 Chignik Climate Resilience Symposium

## July 2024 - March 2025

- Prepare draft and final plan
- Develop funding and implementation recommendations
- Present plan

# Chignik Subregion Watershed Plan: At-A-Glance Project Summary

Planning for a thriving, healthy Chignik regional watershed. DRAFT, updated April 9, 2024.

- 1 Project Purpose:** The Chignik Bay Tribal Council is preparing a subregional watershed plan for the Chignik subregion.

**The plan will** summarize what we know today about the watershed and how the watershed is valued. **The plan will** bring together residents, scientists, and other stakeholders to identify and prioritize projects that will promote water quality while supporting subsistence and economic development (commercial fishing, ecotourism).

**The plan will not** include field work or primary data.

- 3 Potential Threats:** Understanding potential water quality threats and pollution sources are crucial for effective watershed management. Here are some that may be impacting the Chignik region.

A. Big rain events cause erosion, changes to stream function, and increased runoff.

B. Runoff is water from rain that drains from roofs, roads, sidewalks and other surfaces that doesn't soak into the ground.

C. Increased runoff creates more chance for pollutants to enter the water, especially from abandoned dump sites that aren't monitored, derelict buildings, or through a community's stormwater system.

D. Higher temperatures from climate change heat our streams and ocean, increasing algal blooms and threatening salmon survival.

E. Coastal erosion from wind events, sea level rise, and increasing snow and rain.

F. Risk of chemical contaminants from storage of tanks near water or transport of fuel between communities or on the ocean.

- 2 Project Timeline:**

**Save the Date!**  
Chignik Regional Symposium  
June 6-8, 2024



- 4 Potential Outcomes:**

The following are potential ways the watershed plan could guide positive change in Chignik communities:



- 5 Quick Facts about the Chignik Watershed\*:**

**3.7° F increase in temperature** over the last 50 years.

**43%** land is owned and managed by village corporations.

**216 residents** as of 2022.

**683 miles (and counting)** anadromous streams, home to five salmon species.





\*Watershed boundaries include the communities of Chignik Lake, Chignik Lagoon, and Chignik Bay; Ivanof Bay and Perryville not included.

# Chignik Subregion Watershed Plan: What We Know So Far & Questions that Guide Us




Planning for a thriving, healthy Chignik regional watershed. DRAFT, updated April 9, 2024.

## Guiding Questions

### Areas We Cherish

-  Community Water System
-  Drinking Water Protection Area
-  Known Salmon Stream
-  Subsistence Harvest Area

### Areas of Concern

-  Active Dump or Landfill
-  Closed Dump or Landfill
-  Contaminated Site

## Project Website

Visit the project website for more information and to sign up for updates:  
[ChignikWatershed.com](https://ChignikWatershed.com)



## Project Contacts

**Jeanette Carlson**  
Chignik Bay Environmental Coordinator  
[jeanettecarlson749@gmail.com](mailto:jeanettecarlson749@gmail.com)  
907-749-4019

**Molly Mylius**  
Consultant Project Manager  
[molly@agnewbeck.com](mailto:molly@agnewbeck.com)  
907-782-8787

## 1. What areas of the watershed are most important and should be protected?

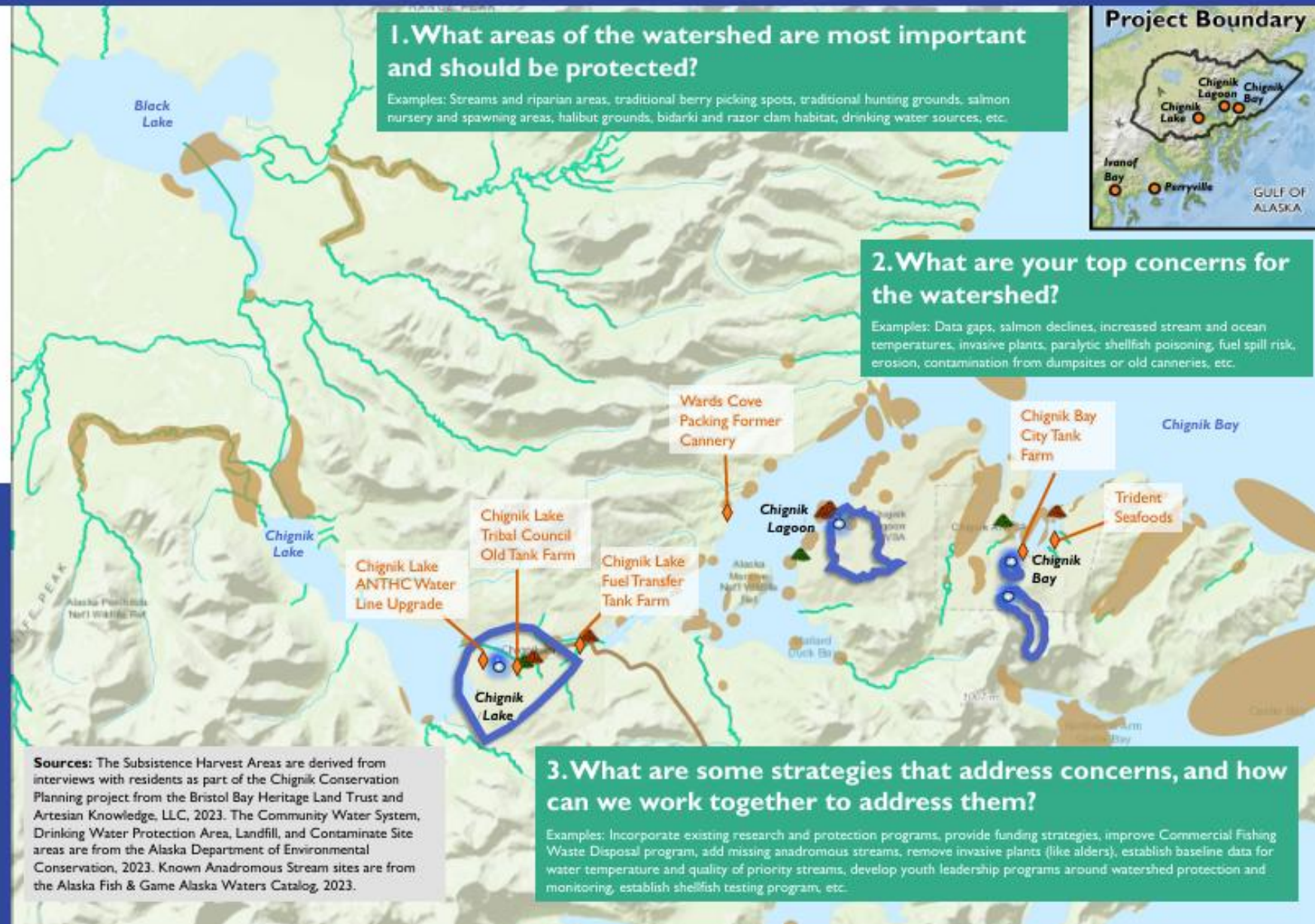
Examples: Streams and riparian areas, traditional berry picking spots, traditional hunting grounds, salmon nursery and spawning areas, halibut grounds, bidarki and razor clam habitat, drinking water sources, etc.

## Project Boundary



## 2. What are your top concerns for the watershed?

Examples: Data gaps, salmon declines, increased stream and ocean temperatures, invasive plants, paralytic shellfish poisoning, fuel spill risk, erosion, contamination from dumpsites or old canneries, etc.



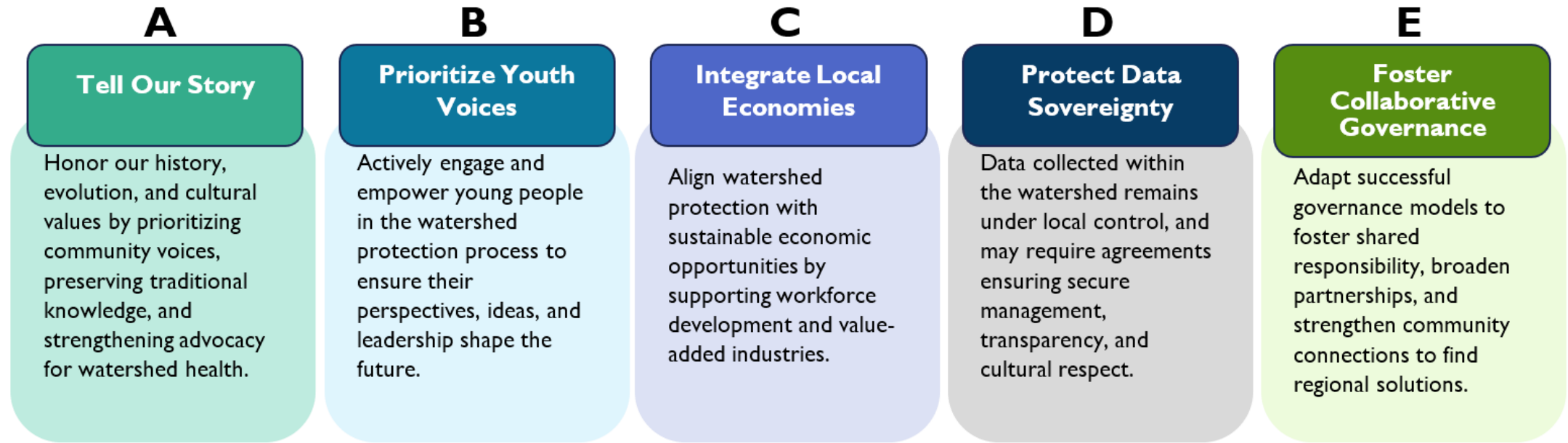
**Sources:** The Subsistence Harvest Areas are derived from interviews with residents as part of the Chignik Conservation Planning project from the Bristol Bay Heritage Land Trust and Artesian Knowledge, LLC, 2023. The Community Water System, Drinking Water Protection Area, Landfill, and Contaminate Site areas are from the Alaska Department of Environmental Conservation, 2023. Known Anadromous Stream sites are from the Alaska Fish & Game Alaska Waters Catalog, 2023.

## 3. What are some strategies that address concerns, and how can we work together to address them?

Examples: Incorporate existing research and protection programs, provide funding strategies, improve Commercial Fishing Waste Disposal program, add missing anadromous streams, remove invasive plants (like alders), establish baseline data for water temperature and quality of priority streams, develop youth leadership programs around watershed protection and monitoring, establish shellfish testing program, etc.

# Guiding Principles

Guiding principles are the foundational values that shape the development and implementation of all strategies. They provide a framework for decision-making, ensuring that strategies and actions align with community values and long-term goals for sustainability and resilience.



Source: Chignik Subregional Watershed Plan, based on input from participants at the 2024 Chignik Resiliency Symposium; learn more at [chignikwatershed.com/](https://chignikwatershed.com/)





# Guiding Principle B – Prioritize Youth Voices

## UAF Teacher Field Class in Chignik, July 2024



Alaska Coastal Cooperative

[akcoastal.org](http://akcoastal.org)



PAUL G. ALLEN  
FAMILY FOUNDATION

UAF UNIVERSITY OF  
ALASKA  
FAIRBANKS

Chignik Regional Climate Resiliency Symposiums (2022, 2023, 2024 in Chignik). *Next Symposium tentatively scheduled for June 25-27.*

# 2024 Symposium Key Takeaways & Outcomes

## Key Takeaways

- Creating more opportunities for youth involvement, transfer of knowledge and culture, youth participation, and youth leadership
- Continue collaboration with partners and neighbors. There was a hope that next year's Symposium can include more residents for the Chignik Subregion, not just Chignik Bay.
- Research and data collection is key to fine tuning fisheries regulations, best practices, and resilience during fisheries disasters.

## Outcomes

- Hosted a Family Culture Camp in Chignik Bay (Alaska Coastal Cooperative).
- Completing LiDAR imagery for Chignik communities (Lake and Peninsula Borough).
- Launched the "Chignik Forever" mini feature film (Alaska Coastal Cooperative).
- Finalizing a Community Plan for Chignik Bay that will be adopted in 2025 (City of Chignik Bay, Chignik Bay Tribal Council, and Far West).
- Submitted a resolution for Alaska Tribal Spectrum's BIA application to install solar panels for 26 tribally owned homes (Chignik Bay Tribal Council).
- Completing a preliminary engineering report for the bridge and road to the dump site in Chignik Bay (Bristol Bay Engineering, Chignik Bay Tribal Council)



# June 2024 Symposium

[9-13-24\\_ChignikClimateSymposium\\_Summary.pdf](#)



## Symposium Flyer



## 2024 CHIGNIK REGIONAL Resiliency Symposium

**JUNE 6TH - 8TH AT THE COMMUNITY HALL**

ALL ATTENDEES ARE ELIGIBLE FOR THE DOOR PRIZE DRAWINGS!

### JUNE 6TH, 9:30 AM-5:30 PM

**10:30 AM** - UAF researchers unveil a year's worth of progress on a community-driven science project that strengthens indigenous resilience through technology and capacity building. Expect data updates, a field school discussion, and a video premiere.

**11:30 AM** - Chignik Intertribal Coalition and Chignik Regional Aquaculture Association present updates on tribal fish initiatives and funded projects.

**1:30 PM** - Alaska Salmon Program & ADF&G Kodiak Lab examine Chignik Lake vs Black Lake sockeye competition & growth patterns, with an update on 2018 disaster research projects.

**2:30 PM** - Chignik communities explore Green Star assessments for improved resource management & brownfield redevelopment in a changing climate.

**3:45 PM** - LPB managers present on funded and proposed projects for Chignik communities with timelines.

**COMMUNITY POTLUCK JUNE 6TH AT 6:00 PM**

### JUNE 7TH, 9:30 AM-5:30 PM

**10:00 AM** - Economists delve into the economic impacts of fishery disasters on subsistence users' way of life. Join the session for a project overview, timeline, and interactive feedback.

**1:00 PM** - Agnew:Beck Consulting leads a comprehensive Chignik Subregional Watershed Plan workshop. Join discussions on project goals, threats to water quality, valuable resources, and action strategies to prioritize.

**COMMUNITY BBQ JUNE 7TH AT 6:00 PM**

### JUNE 8TH, 9 AM-3:30 PM

**10:00 AM** - Bristol Engineering will dive deep into Chignik Bay Tribe and City accomplishments, including completed Community and Hazard Mitigation Plans, project reports, and future plans.

**11:00 AM** - NSF's ACTION project partners with Chignik Intertribal Coalition for a "Visioning Discussion." Share your thoughts on coastal issues and shape the project's direction for Chignik Bay.

## Join us on Zoom!

<https://agnewbeck.zoom.us/j/81897860633>

**Dial: 1-888-475-4499 (Toll-free)**

**Meeting ID: 818 9786 0633#**

**Passcode: 604470#**

## Need More Information?

Debbie Carlson, CBTC Admin: 907-749-4018  
Chickie Carlson, CBTEC: 907-749-4019

<https://chignikwatershed.com/>

Detailed agendas are available at the Tribal & City offices



Alaska Coastal Cooperative

[akcoastal.org](http://akcoastal.org)



PAUL G. ALLEN  
FAMILY FOUNDATION



# Chignik Bay Community Database (updated May 2024)

Community Name	What kind of work was done?	Dates of work?	Contact person in community?	What was their role on the work?	Contact person from project or agency?	What was the university or contact's title/role on the work?	What is their organization or University?	What are the products from the work? [Database, report, poster, verbal presentation, PowerPoint, policy brief, ...]	Data or product completed? [Mark X if complete]	Comments on the work - How did it go? Where there problems? How could the methods be improved on?
Chignik Subregion (under CBT)	Chignik Conservation Planning	Jan 2023-Feb 2024	Jeanette Carlson, Chignik Bay Tribe	Secured project funding, coordinated meetings, provided historical & local place names, etc.	Jeanette Carlson, Chignik Bay Tribe; Tim Troll, CEO Bristol Bay Heritage Land Trust	N/A	N/A	GIS maps documenting areas of subsistence and cultural significance; summary report.	X	Project successfully completed, and includes detailed GIS maps that can also be displayed in PDF format.
Chignik Bay Climate Resiliency Action Plan	On-site visits by engineers and exchanges with Tribal and City Council staff and residents	2022-Feb 2024	Jeanette Carlson, Chignik Bay Tribe	Secured project funding, helped coordinate meetings with tribal and city councils.	Isaac Pearson, P.E. Senior Civil Engineer, Bristol Engineering Services Company (BESC)	Chris Maio, UAF participated in conf. call & support letter	UAF & ACGL	Presentation at 2023 Chignik Regional Climate Resiliency Symposium, Final Report completed August 2024	X	Comprehensive report that includes "priority projects" our community needs to pursue.
Chignik Bay	Small Community Emergency Response Plan (SCERP) and Emergency Response Plan (ERP)	2022-2023	Jeanette Carlson, Chignik Bay Tribe; Dannica Anderson, City of Chignik	Coordinated with councils and community members	Jeanette Carlson, Dannica Anderson, and Isaac Pearson/BESC	N/A	N/A	SCERP report, ERP report	X	SCERP followed ADEC format, ERP more comprehensive. Both are intended to be reviewed annually and updated by both councils as needed.
Chignik Bay	Chignik Bay Coastal Hazard Assessment	Draft Report 2023, monitoring ongoing	Jeanette Carlson, Chignik Bay Tribe	Coordinate with UAF and staff on travel dates to conduct erosion monitoring, tidal gauge installation.	Chris Maio and grad students	Chris Maio, UAF Associate Professor of Coastal Geography	UAF & ACGL	Coastal Hazard Assessment, presentations at 2022 & 2023 Chignik Regional Climate Resiliency Symposium	UAF can provide final thesis	Chignik Bay Coastal Hazard Assessment Report very useful and the ongoing erosion monitoring and tidal gauge data collection extremely important to our community and related projects.
Chignik Bay	Funding secured for Chignik Hydroelectric Dam and Water Distribution System	2024-2026	Chignik Bay Tribal Council	Collaboration with L&PB, City of Chignik	Nathan Hill, LPB Manager	N/A	N/A	Lake & Peninsula Borough secured DOE Energy Improvement funding (\$7,270,000) for Run-of-the-River Hydroelectric Facility	Will complete this section later when we have more info on project start/completion dates.	Construct a new run-of-the-river hydroelectric facility, replacing a 70+ year-old wooden dam at risk of failure. Aims to improve energy & water security as the current dam leaks, also jeopardizing the community's only stable source of clean water. The proposed 2.1 MWh facility aims to replace 100% of the community's diesel. It will also provide excess power for heating, electric vehicle charging, and expansion of economic activities like tourism and fish processing. The Chignik Bay Tribal Council will own the facility and plans to sell power to utilities for 80% of the avoided cost of fuel, reducing total electricity rates by an estimated 7%.
Chignik Bay	BIA proposals to secure funding for Priority Projects in the Chignik Climate Resiliency Plan	2024-2025	Jeanette Carlson, Chignik Bay Tribe	Coordinated with BESC on proposals and submission.	Jennifer Robinette, BIA Tribal Climate Resiliency Coordinator	N/A	N/A	Preliminary Engineering Reports (PERs) for Indian Creek Bridge & Landfill Road; East Side Electric Distribution System Upgrades	Will complete this section later when PERs prepared	Will complete later when PERs prepared
Chignik Bay	Collaboration with ANTHC and LPB and City of Chignik to apply for sanitation funding	Pending	Dannica Anderson, Chignik City Clerk; Nathan Hill, LPB	Communicate with ANTHC on project concept and support	Joyell Acuna, ANTHC DEHE	N/A	N/A	N/A		
Chignik Bay	2019 Tribal Hazard Mitigation Plan updated to meet FEMA requirements	2023-April 2024	Jeanette Carlson, Chignik Bay Tribe	Coordinating with BESC and community on updates and new information to incorporate	Isaac Pearson, P.E. Senior Civil Engineer, Bristol Engineering Services Company (BESC)	N/A	N/A	Updated Tribal Hazard Mitigation Plan to meet FEMA requirements	Will complete when THMP completed & adopted	FEMA requires THMP be updated every 5 years and a pre-requisite to applying for certain FEMA grants.
Chignik Bay	Updating Chignik Comprehensive Plan	2023-April 2024	Jeanette Carlson, Chignik Bay Tribe; Dannica Anderson, City of Chignik	Coordinating with BESC on community surveys and public meetings	Isaac Pearson, P.E. Senior Civil Engineer, Bristol Engineering Services Company (BESC)	N/A	N/A	Updated Comprehensive Community Plan	Will complete section after plan adoption	
Chignik Bay	Comprehensive Climate Pollution Prevention Plan	2023-Sept 2025	Jeanette Carlson, Chignik Bay Tribe	Completing survey distributed by BBNA	Michelle Smith, BBNA Pollution Prevention Specialist	Not sure	Not sure	Completed community survey; CCPPP	Phase 1 - Survey (completed); Phase 2 - Climate Pollution Plan	
Chignik Bay	Chignik Bay Community Wildfire Protection Plan	2024	Jeanette Carlson, Chignik Bay Tribe	Coordinated with consultant on grant proposal	Joy Britt, Atlas Environmental Consulting	N/A	N/A	Wildfire Protection Plan	Chignik notified 5/14/2024 their proposal not funded.	Solicitation for Round 3 funding announced soon; Chignik Bay may apply again. Note: BBNA is only recipient that received (plans for Aleknagik and Dillingham).
Chignik Subregion (under CBT)	Watershed Planning for Chignik Subregion	2023-Dec 2024	Jeanette Carlson, Chignik Bay Tribe	Oversee the DECACWA grant, participate in zoom calls/meetings with Agnew-Beck (contractor)	Molly Mylius, Senior Manager, Agnew-Beck (project lead)	ADEC is funding agency; UAF tracking the plan	ADEC Div. of Water	Products to date include: Watershed Characterization Report; Watershed Issues Assessment; Outreach Summary	Pending	Watershed Plan progressing well and receiving positive feedback on interim products.
Chignik Subregion (under CBT)	Chignik Regional Climate Resiliency Symposium	June 2022, June 2023, June 2024	Jeanette Carlson, Chignik Bay Tribe	Coordinate the symposium with input from multiple entities.	Primary contacts: Jeanette Carlson and Agnew-Beck	Provided input and presented at 2022 and 2023 Symposiums.	UAF & ACGL	2023 Summary at (chignikwatershed.com). June 2024 Symposium will be available by August 2024.	X (June 2024 Symposium Summary will be added in July or August 2024)	The 2023 Symposium has received positive feedback and heightened interest in participating via zoom or in person for 2024 Symposium. Provides a forum for sharing ongoing studies, new information, approaches that benefit the region.
Chignik Bay	Proposed Transportation Safety Plan	2024-2025	Debbie Carlson, Tribal Administrator; Dannica Anderson, City Clerk	Project hasn't started yet but Debbie and Dannica will be key contacts	BBNA Transportation & Infrastructure Dan Breedan	To be determined	UAF & ACGL (presumed)	Project will be funded according to BBNA, and include input from community and other entities	Will complete this section later	Although the project hasn't started yet, UAF drone footage of avalanche areas that affect the main road from town to the airport will be important information to incorporate.
Chignik Bay	Green Star Community Assessment	August 2023 (field work), September 2023 (final report)	Jeanette Carlson, Chignik Bay Tribe; Dannica Anderson, City Clerk	Coordinating site visit with Alaska Forum Green Star Program	Tanner Johnson, Environmental Programs Coordinator, Alaska Forum	N/A	N/A	Community based plan to improve landfill operations, waste reduction, energy conservation, wastewater & clean drinking water	X	Field work went well and Green Star on-site assessment done in conjunction with Delta Backhaul
Chignik Bay, Chignik Lake, Chignik Lagoon	Household Hazardous Waste (HHW) & scrap metal collected, organized for barge deployment to companies accepting waste	August 2023, another backhaul potentially summer 2024	Tribal and city staff from the three Chignik communities	Coordinating with Back Haul Alaska	Doug Huntman	N/A	N/A	HHW and scrap metal consolidated in Chignik Bay. Backhaul of some of the HHW and scrap metal completed.		
Chignik Bay	Lidar mapping - Lower Chignik River and Chignik Bay	Spring-Summer 2024			Nathan Hill/Dannica Wilson, Lake & Peninsula Borough	N/A	N/A	Lidar map(s)	Pending	
Chignik Bay, Chignik Lagoon, Chignik Lake	High Resolution Mapping of Anadromous Streams in the Chignik Watershed	Federal Fiscal Year 2024			Tim Troll, SWASHP & Mike Willis (grad student)	Matthew Balazs	UAF & ACGL	Maps identifying likely anadromous streams based on available LIDAR data, NHD update; updated bathymetric maps from community-based data collection	Pending	Project approved for funding by SWASHP as of March 2024, several months into award period. May request for extension on deliverable in fall of 2024.
Chignik Region Communities	Converting Community Profile Maps to GIS	May - December 2024	N/A	N/A	Nathan Hill/Dannica Wilson, Lake & Peninsula Borough	N/A	N/A	Community Profile Maps developed by State of Alaska years ago converted to GIS	Pending	Communities will be able to access online parcel viewer and community maps when the project is completed. We hope to add utility layers and addresses in the future when funding is secured.
Chignik Region	Impacts of recent Chignik sockeye fishery disasters on subsistence use in region and pathways for building resilience.	Spring 2023 - July 2025	Northern Economics conducting interviews with Chignik region community members	Participant interviews, community & council review and approval of draft and final report.	Melissa Errend, Economist, Northern Economics, Inc. Mike Downs, Wislow Research, George Anderson/CIC	CIC/George Anderson	Chignik Intertribal Coalition (CIC)	Final Report (July 2025) will document impacts of the ongoing sockeye fishery disasters on subsistence users in the Chignik region and ways individuals & households have attempted to cope with these impacts, as well as any encountered barriers to adaptation.		Document impacts and identify strategies that will expand the capacity of local residents to recover from the current fishery disasters and better manage possible future disasters. Funding from the Pacific States Marine Fisheries Commission, provided in cooperation with the NOAA and the ADP&G. Funding comes from the 2018 Chignik federal fishery disaster declaration spend plan, where research to better understand the socioeconomic impacts of the disaster on subsistence users was a priority.
Chignik Bay	Dock Improvements With PSMFC Disaster funds	Fall 2022-	Chignik City Council	Collaboration with L&PB	L&PB	N/A	N/A	Sight visit and assessment of subsistence building, procurement and maintenance of forklifts, predesign for waterline.	Advance planning and construction efforts	This project aims to use awarded disaster funds for the engineering design of water line to the dock
Chignik Bay	Chignik CDBG Application Additional Dock/Waterfront Improvements including visitor center	Summer 2023-	Chignik City Council	Collaboration with L&PB	L&PB	N/A	N/A	Engineering design and permitting documents	Advance planning efforts, have a shovel ready project to apply for CDBG construction funds	The planning & design can be used to: assess facilities (cannery property), build public restrooms and welcome center, improve lighting, create vendor areas, potentially adding a boat lift, establish storage for maintenance, improve boat landing/launch area, incorporate freezers, signage. Items need to be prioritized.
Chignik Bay	Chignik Community Hall Energy Efficiency Improvements and Rooftop Solar	Fall 2024- Winter 2025	Dannica Anderson, Chignik City Clerk	Secured Project Funding, Coordinated planning efforts with community & councils	Dannica Anderson, chignikcityclerk@gmail.com	N/A	N/A	Construction of community hall improvements	Develop work plan, procure supplies, identify contractors, construction/ installation	Replace windows, doors, weather stripping to improve building envelope, install a rooftop solar system, upgrade lighting and install occupancy sensors, replace furnace and hot water heater and install smart thermostat, Replace aging refrigeration and freezing units, and complete an energy audit



# The Value of Networking



- Paul G. Family Allen Foundation Representative attending 2023 Symposium
- Director of Smithsonian Museum of National History in Washington DC presenting in Chignik
- Bristol Bay Heritage Land Trust Director and residents documenting culturally important places



Alaska Coastal Cooperative

[akcoastal.org](http://akcoastal.org)



PAUL G. ALLEN  
FAMILY FOUNDATION

UNIVERSITY OF  
ALASKA  
FAIRBANKS