Office of Clean Energy Demonstrations

THE OFFICE OF

CLEAN ENERGY DEMONSTRATIONS

Energy Improvements in Rural or Remote Areas Program Alaska Briefing

Office of Clean Energy Demonstrations

U.S. Department of Energy

March 28, 2024

Webinar Logistics

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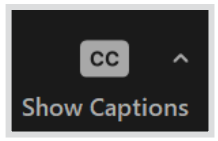

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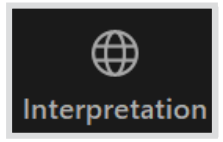

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Is this webinar being recorded?

No, this webinar will not be recorded.

Will the slides be shared?

Yes, a copy of the presentation slides will be shared via email with registrants and on the OCED website within the next week.

Welcome!

Meeting Objectives

Describe the **five Energy Improvements in Rural or Remote Areas (ERA) projects** selected for award negotiations by the Office of Clean Energy Demonstrations (OCED) in Alaska.

Provide transparency on the award process and opportunities to implement clean energy projects.

Create an opportunity for participants to engage with DOE and selectees.

Introductions

Emmanuel Taylor

Facilitator

Regina Galer
ERA
Program Manager,
OCED

Toniqua Hay
ERA
Stakeholder
Engagement Specialist,
OCED

Agenda

- Welcome
- Energy Improvements in Rural or Remote Areas Program Overview
- Regional Project Overview
  - Alaskan Tribal Energy Sovereignty
  - Chignik Hydroelectric Dam and Water Source
  - Clean Energy in the Northwest Arctic
  - Old Harbor Hydroelectric
  - Thayer Creek Hydroelectric
- Community Benefits and Engagement
- Next Steps & Resources
- Feedback Session
- Wrap-up & Close

Opening Remarks

Energy Improvements in Rural or Remote Areas (ERA) Program

ERA Program Overview

The Bipartisan Infrastructure Law (BIL) authorizes DOE to invest **$1 billion in Energy Improvements in Rural or Remote Areas.** The DOE Energy Improvements in Rural or Remote Areas (ERA) Program is managed by the Office of Clean Energy Demonstrations.

Purpose

To provide financial assistance to improve, in rural or remote areas of the United States, the resilience, safety, reliability, and availability of energy and environmental protection from adverse impacts of energy generation.

Program Goals

1. **Deliver measurable benefits to households in rural or remote areas** by funding replicable energy projects that lower energy costs, improve energy access and resilience, and/or reduce environmental harm;
2. **Support new rural or remote energy system models** using climate-resilient technologies, business structures that promote economic resilience, new financing mechanisms, and/or new community engagement practices; and
3. **Build clean energy knowledge, capacity, and self-reliance in rural America**.

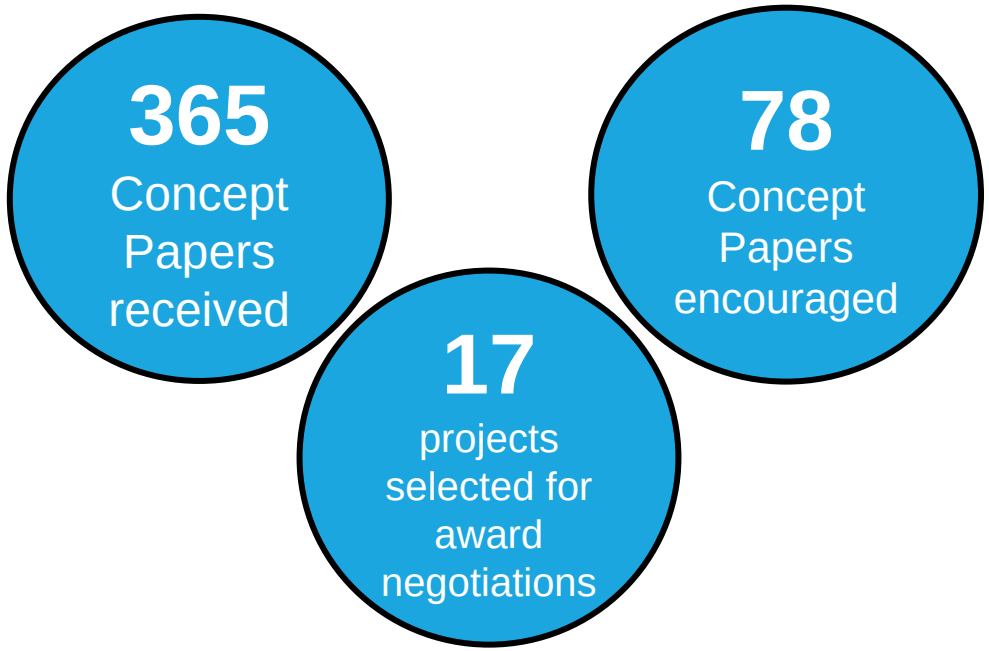
ERA $300M Funding Opportunity

In March 2023, DOE announced **$300 million** in total funding opportunity to increase energy affordability and promote climate resilience with an anticipated federal cost share ranging from **$5 to $100** million per project for single or multi-site demonstration project(s).

Program Outcomes

1. Uses clean energy technologies that improve **reliability and/or resilience of energy systems**
2. **Reduces energy poverty**
3. Improves environmental performance of **energy generation** in rural or remote communities

Status to Date



ERA PROJECT SELECTIONS – ALASKA

	Kotzebue, AK; 10 other Northwest Arctic Borough communities
	Nulato, AK; 7 other Interior Alaska communities
	Chignik Bay, AK
	Old Harbor, AK
	Angoon, AK

Notes:
- **Square icons indicate Topic Area 1**
- **Rounded icons indicate Topic Area 2**
- **Subscripts and star icons indicate multi-site projects**

OCED
Office of Clean Energy Demonstrations

Project Overviews

Alaskan Tribal Energy Sovereignty

Eddie Dellamary
Rural Energy Specialist
Tanana Chiefs Conference

Tanana Chiefs Conference

Energy Project Team

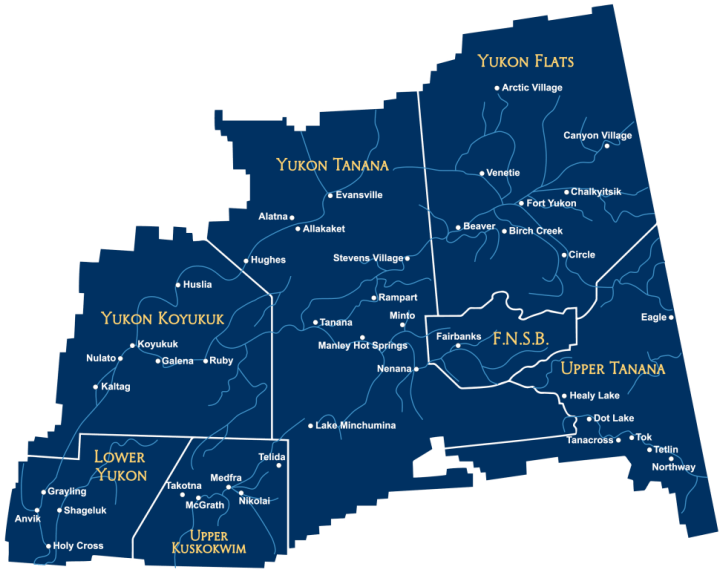
Dave Messier *(Infrastructure Division Director)*

Eddie Dellamary *(Rural Energy Specialist)*

Jason Paskvan (*Energy & Climate Planning Specialist*)

Tanana Chiefs Conference

- The Tanana Chiefs Conference region covers an area of 235,000 square miles in interior Alaska, which is equal to about 37 percent of the entire state, and just slightly smaller than the state of Texas



- We are organized as Dena' Nena' Henash or "Our Land Speaks"; an Alaska Native non-profit Tribal Consortium, charged with advancing Tribal self-determination and enhancing regional Native unity.

- Infrastructure Division (Housing, Broadband, Energy)

Project Summary

Solar PV – BESS

1. Anvik
2. Grayling
3. Huslia
4. Holy Cross
5. Kaltag
6. Minto
7. Shageluk
8. Nulato

Greenhouse gas emissions reduced by 2.9M pounds annually

Annual diesel fuel consumption for electricity generation reduced by 157,000 gallons (down 35%)

Net income of at least $150,000 to be reinvested; power cost savings of $180,000 annually, rate reductions of up to $0.03/kWh

Project Timeline

Phase	Tasks	Dates
Phase 1	Planning: PPA's, Site Control, & Revenue Sharing	Nov 2023 - Mar 2024
Phase 2	Project Development Competitive Procurement of Engineering Services	April 2024 - May 2024
Phase 3	Engineering Design Site Visits, 100% design, Community Meetings	May 2024 - Mar 2025
Phase 4	Construction Implementation Specifically, Construction Procurement	Mar 2025 - April 2025
Phase 5	Construction	May 2025 - Sep 2027
Phase 6	Commissioning & Testing	Sep 2025 - Mar 2028
Phase 7	Ramp-Up & Operations	Sep 2025 - Dec 2030

Project Benefits

- Reduce dependence on diesel fuel through dramatically reducing fuel use
- Reduce carbon emissions
- Provide estimated 5 – 7 jobs to each local community during construction
- Provide one long-term part-time job in each community
- Improve condition of existing power plants
- Improve maintenance at existing power plants
- Reduce blackouts and impacts of blackouts due to new battery backup
- Reduce uncertainty due to reduced dependence on fluctuating diesel fuel

Generate an estimated $150,000 in net income for the IPP

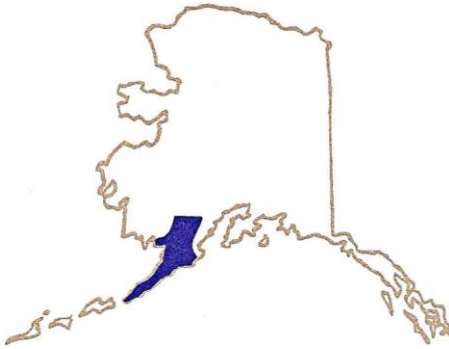
Chignik Hydroelectric Dam and Water Source

Jordan Keeler
Project Manager
Lake and Peninsula Borough

Chignik Bay Hydroelectric

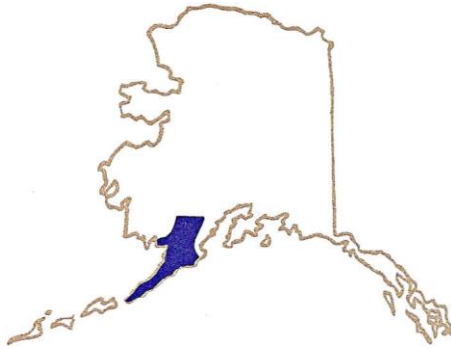
- Partnership between Lake and Peninsula Borough, City of Chignik, Chignik Bay Tribal Council, and the Alaska Native Tribal Health Consortium
- Community of ~100 People in Southwest Alaska
- Commercial and subsistence Salmon Fishing Economy

Project Overview



- Scope: Design and Replace an existing 80-year-old wood face dam with new dam, transmission line, and hydroelectric powerplant.
- Budget:$13M, ~50% OCED funding, 50% Indian Health Service funding
- Project has an existing FERC license
- Existing failing infrastructures serves as communities only viable source of clean water

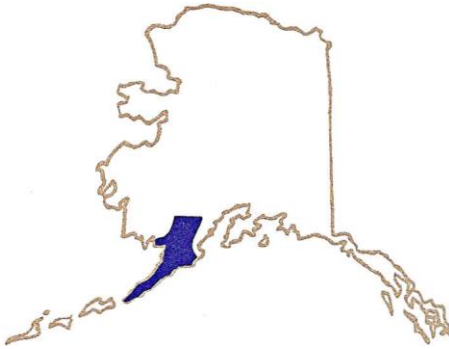
Estimated Project Timeline



- Project Planning
  - Pre-Award Negotiations
  - CPA with ANTHC
  - RFP – Engineering Services
- Engineering and Permitting
  - Geotech, Survey, Data Collection
  - Engineering Design
  - Permitting
  - PPA
- Construction
  - Competitive Bid
  - Two Year Delivery
- Operations

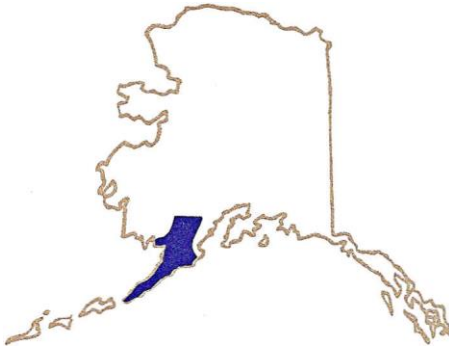
Key Task	Estimated Start	Estimated Completion
Project Planning	March 2024	August 2024
Engineering and Permitting	September 2024	March 2026
Construction	April 2026	October 2027
Operations	November 2027	December 2077

Community Benefits Plan



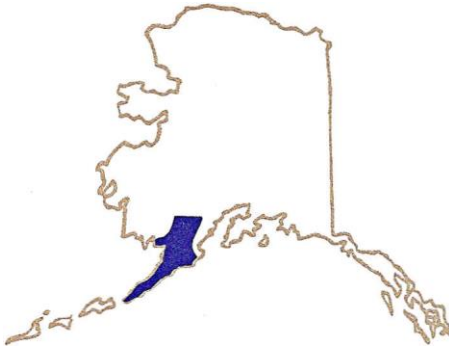
- Chignik, AK – Considered A “Disadvantaged Community”
- 99th percentile – High Energy Costs
- 95th percentile - Unemployment
- 79th percentile – Low Income Individuals
- Alaska Native Village Service Area – Chignik Bay Tribal Council – 61% Alaska Native population
- Food Desert
- Poor Health Indicators
- 4 Federally Declared Disasters for Commercial and Subsistence Fishery in last 8 years

Community Benefits Plan - continued



- Tribal Ownership of Energy Generation Infrastructure
- Alaska Native Preference in contractor selection
- Alaska Native Preference in employee hiring
- Local Labor Hiring Preference – 2-5% deduction for subcontracted bidders - Local Labor Utilization Reports
- 20% anticipated reduction in electricity prices
- $100’s of thousands in Tribal Revenues generated from clean power sales
- Emissions Reductions

Previous Community Engagement



- Regular City and Tribal Council Meetings developing the projects over 11 years
- Dozens of grant applications to a variety of state and federal programs to fund components of the project over time
- Hydroelectric Feasibility Study Completed
- Preliminary Water Source Engineering Report Completed
- Project Ownership Structure Established
- FERC License Secured

Clean Energy in the Northwest Arctic

Ingemar Mathiasson
Energy Manager
Northwest Arctic Borough

NORTHWEST ARCTIC BOROUGH

PROJECT PARTNERS

NANA
ATAUTCHIKUN
AVEC
DEERSTONE
KEA

DICKIE MOTO
(DEERING, AK)
Mayor, NAB

INGEMAR MATHIASSON
Energy Manager, NAB

ERIN STEPHENS
Grants Administrator, NAB

ANGIE STRUM
(NOORVIK, AK)
Borough Treasurer, NAB

ALBIE DALLEMOLLE
(KIANA, AK)
Vice President of Economic Development and Sustainability, NANA

KATHLEEN STUCKEY
(KOTZEBUE, AK)
Executive Director, Atautchikun (NANA)

SONNY ADAMS
(KOTZEBUE, AK)
Director of Energy, Atautchikun (NANA)

TOM ATKINSON
General Manager/CEO, Kotzebue Electric Association (KEA)

BILL STAMM
CEO, Alaska Village Electric Cooperative (AVEC)

DARREN WESTBY
Engineering Manager, Alaska Village Electric Cooperative (AVEC)

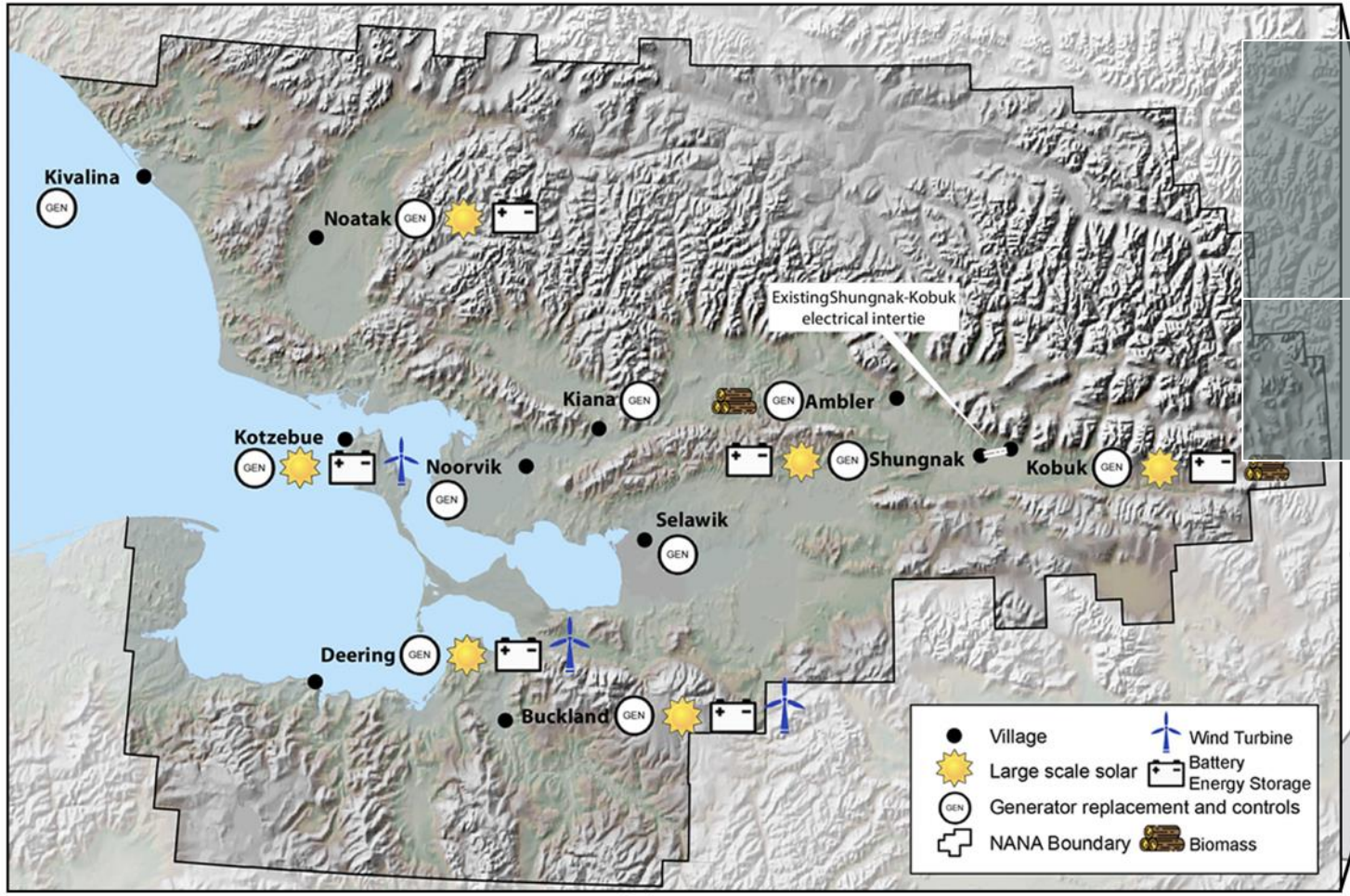
BRIAN HIRSCH
CEO and Founder, DeerStone Consulting

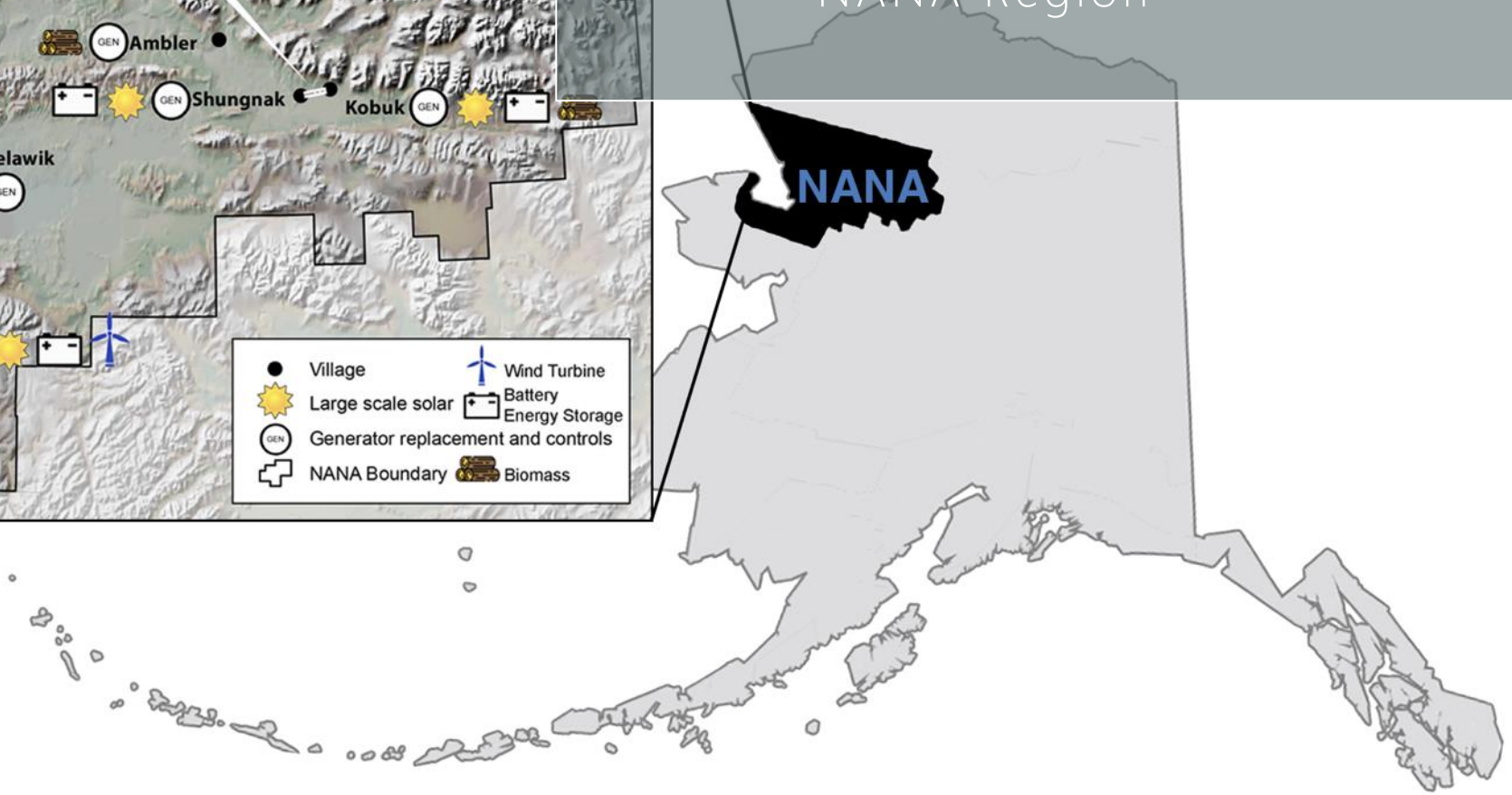
MATT BERGEN
Engineer, Kotzebue Electric Association (KEA)

LEAH OLSEN
Mechanical Engineer, DeerStone Consulting

NORTHWEST ARCTIC BOROUGH, ALASKA

NANA Region





PROJECT OVERVIEW

SOLAR PV & BATTERY STORAGE

- 11 Communities
- 4 MW Solar PV
- 7.1 MWh Battery Storage
- High Penetration hybrid systems – 1,000s of diesels-off hours annually

HEAT PUMPS

- 9 Communities
- 859 low temp heat pumps
- Replace diesel heat costing of $17/gal
- Successfully demonstrated in Ambler, AK

TRIBAL INDEPENDENT POWER PRODUCERS

- 11 Communities
- Establish Tribal IPPS
- Sell renewable power to local utility
- Annual revenues of $970,000

MVDC ELECTRICAL TIE LINE

- Enhanced reliability and resiliency
- Facilitate expansion of renewable energy generation
- Pilot project that is repeatable

OVERALL BENEFITS

- Energy security for 11 Communities
- Workforce development
- Enhanced resiliency
- Displace 350,000 gal diesel annually
- Save $1.9M per year in electricity and heating
- Save $12M in avoided capital costs

TRIBAL, CITY, REGIONAL & STATEWIDE SUPPORT

TRIBE

- ✓ Native Village of Ambler
- ✓ Native Village of Deering
- ✓ Native Village of Buckland
- ✓ Native Village of Kiana
- ✓ Native Village of Kivalina
- ✓ Native Village of Kobuk
- ✓ Native Village of Kotzebue
- ✓ Native Village of Noatak
- ✓ Native Village of Noorvik
- ✓ Native Village of Selawik
- ✓ Native Village of Shungnak

CITY

- ✓ City of Ambler
- ✓ City of Deering
- ✓ City of Buckland
- ✓ City of Kiana
- ✓ City of Kivalina
- ✓ City of Kobuk
- ✓ City of Kotzebue
- ✓ City of Noorvik
- ✓ City of Selawik
- ✓ City of Shungnak

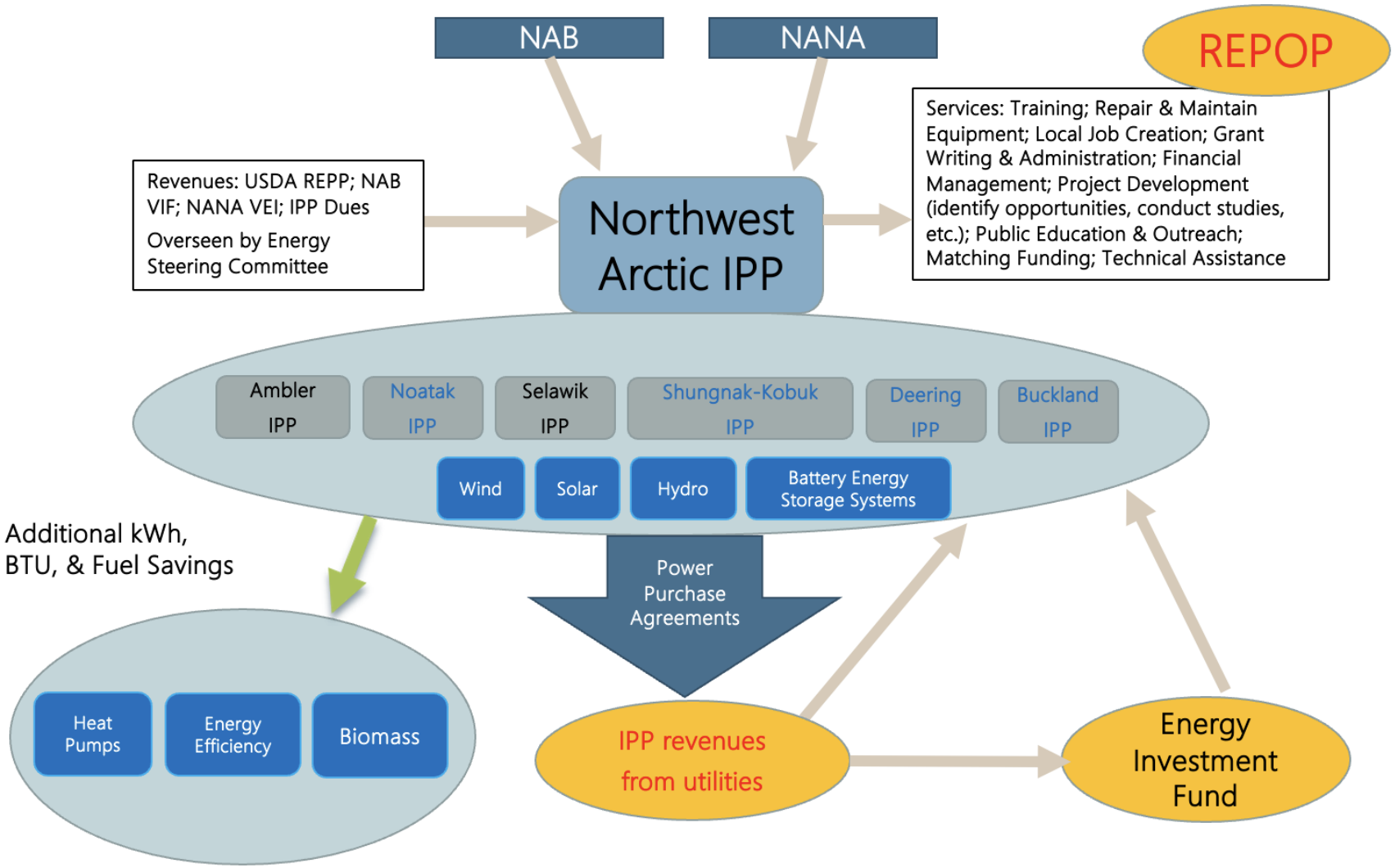
REGIONAL & STATEWIDE

- ✓ Northwest Arctic Borough
- ✓ NANA
- ✓ Alaska Village Electric Cooperative
- ✓ Kotzebue Electric Association
- ✓ Ipnatchiaq Electric Company
- ✓ Buckland Electric Company
- ✓ Alaska Technical Center
- ✓ Renewable Energy Alaska Project
- ✓ DeerStone Consulting
- ✓ Alaska Energy Authority

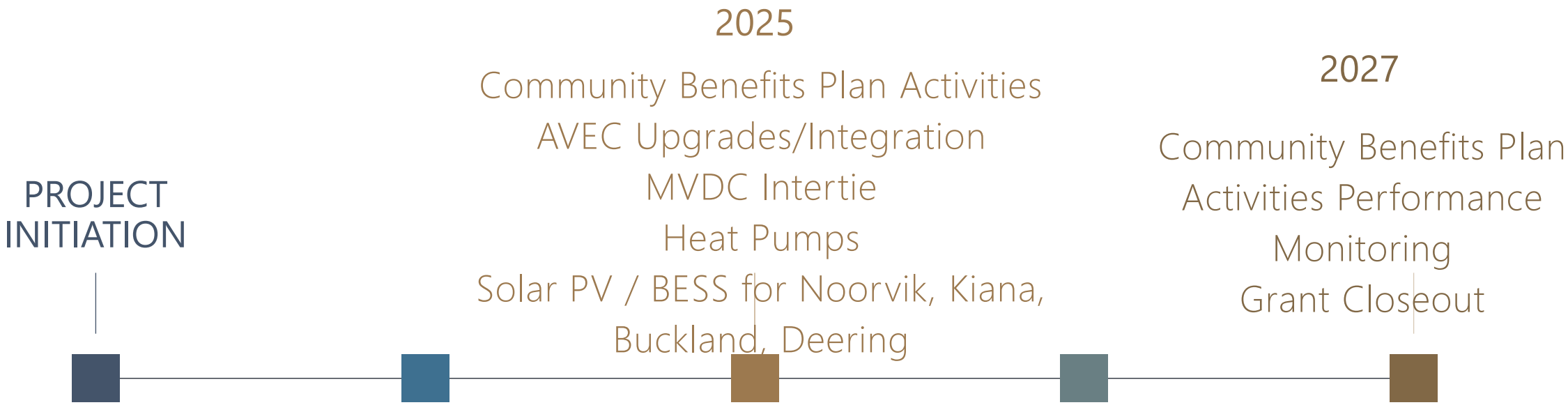
COST OF STAYING WARM IN THE ARCTIC

- *37% of Northwest Arctic residents went without heat during the winter*
- *46% of Northwest Arctic residents cannot afford to heat their homes*
- Region-wide, *heat accounts 54% of diesel fuel* consumption annually, *3,500,000+ gallons*
- The cost of diesel fuel is as much as *$17 per gallon*
- Winter temperatures are routinely *40°F below zero*
- In communities with no wood resource, *heat pumps are the most efficient alternative* to burning diesel fuel to stay warm
- Ambler residents *save $2,000+ per year* in heating costs by using heat pumps

REGIONAL TRIBAL INDEPENDENT POWER PRODUCERS STRUCTURE



PROJECT TIMELINE



QUYANAQPAK
THANK YOU

NORTHWEST ARCTIC BOROUGH

Old Harbor Hydroelectric

Cynthia R Berns
Project Manager for the Alutiiq Tribe of Old Harbor
and
Vice President of Community and External Affairs for
Old Harbor Native Corporation

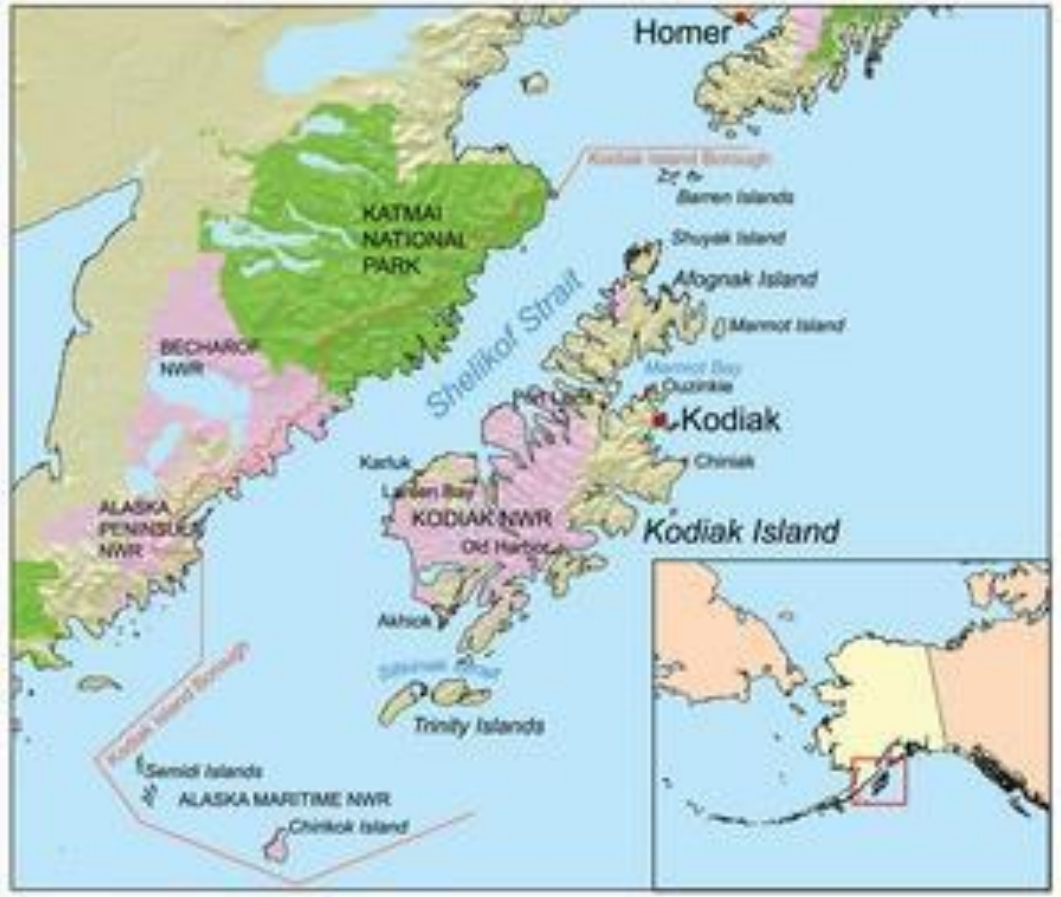
Old Harbor Hydroelectric Project

Old Harbor Hydroelectric Project

- **Alutiiq Tribe of Old Harbor (ATOH), Old Harbor Native Corporation, City of Old Harbor and the Old Harbor Alliance have been working together to improve infrastructure & economic development opportunities to mitigate rural to urban out migration and improve the overall health of our community members**

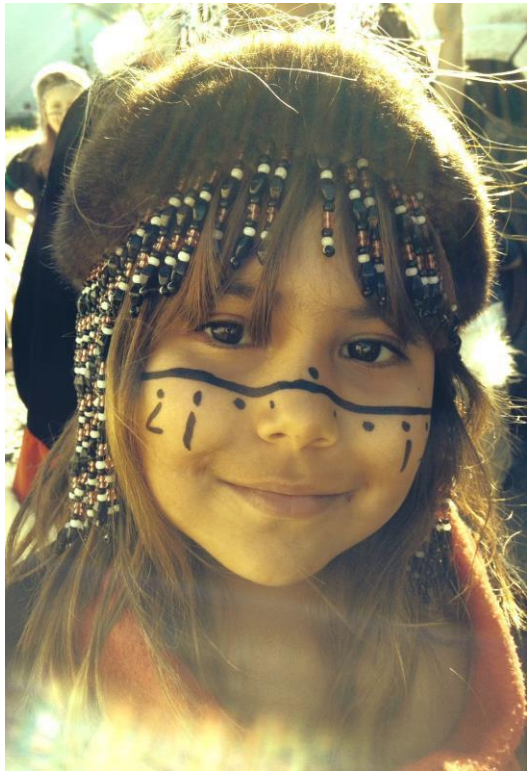
- **700+ Tribal Members (230 residents)**

- **Energy & Food sovereignty have been a top priority to ensure self-sustainability**

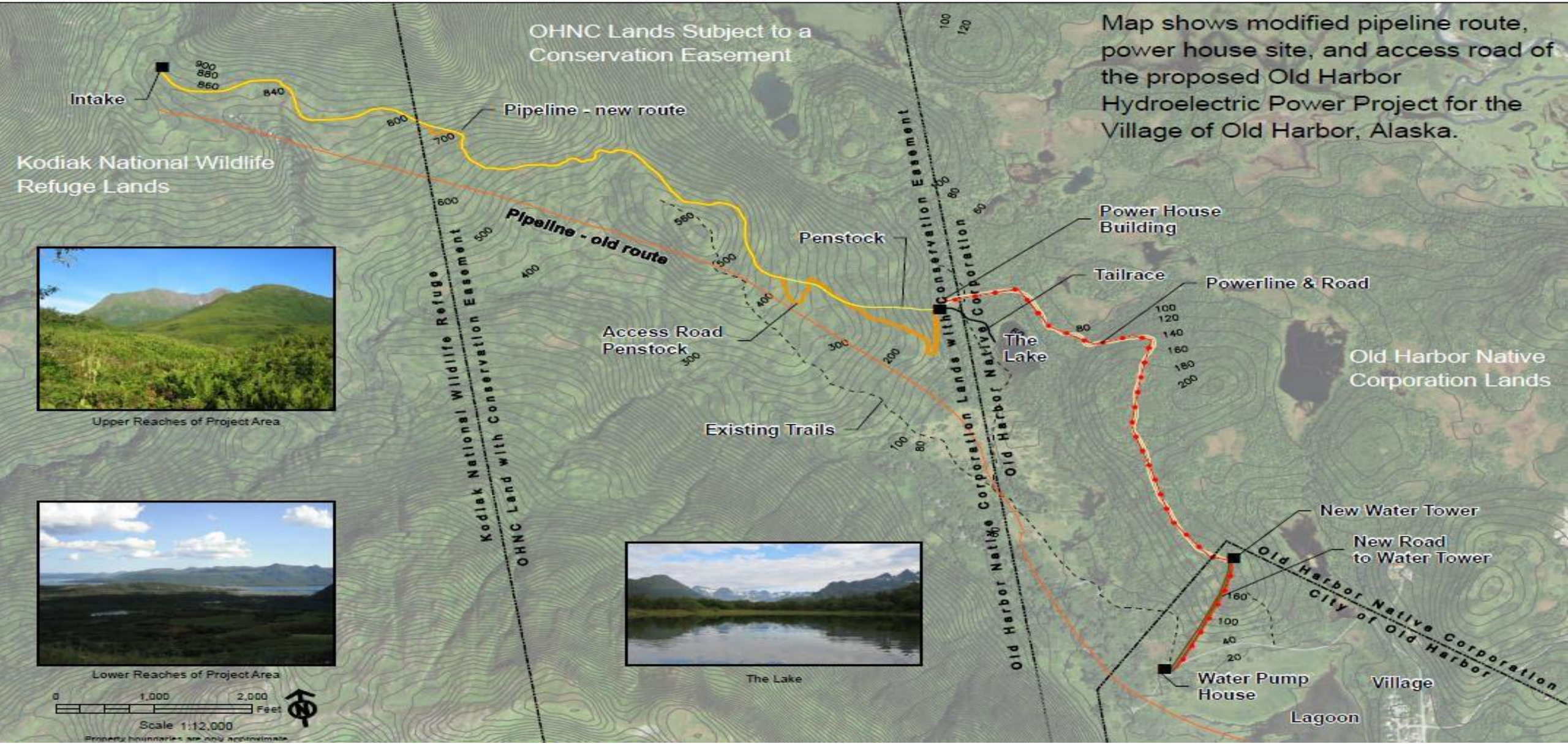


Old Harbor Hydroelectric Project

- **Pursuing a renewable energy source for over 40 years.**
- **Collaborated with local utility to complete EA and obtain FERC permit**
- **FERC permit is being transferred from local utility to ATOH**
- **Run of the River Hydroelectric Project**
  - **262 kW with peak capacity at 525 kW**
  - **Avoid 56,000 gallons of diesel fuel annually**
  - **33 of 50 year payback**
  - **100% of financial benefit to stay within community**
- **Partnership with statewide tribal healthcare organization to see the project to completion**
- **Per the FERC permit, construction must begin by April 29, 2026 and be complete by April 29, 2029.**



Old Harbor Hydroelectric Project



Old Harbor Hydroelectric Project Community benefits Plan

Locally produced, affordable energy could help avert high energy costs which are one of the contributing elements of rural to urban migration.

Old Harbor residents' health and safety will improve from the environmental benefits resulting from a reduction of hydrocarbon use, including reduced potential for fuel spills or contamination during transport, storage, or use (thus protecting water and subsistence food sources); improved air quality; and decreased contribution to global climate change from fossil fuel use.

Benefits	Tracking metric	Unit	Data source
Decrease in water/sewer costs	Annual IPP revenue distributed to households as water/sewer subsidy	$540	Water/sewer utility billing data
Decrease in greenhouse gas emissions	Renewable electricity, diesel generator efficiency, diesel carbon emissions	Tons CO2	System monitoring, PCE reports
Increase in job creation	Permanent and full time equivalent jobs	2	Community reporting
Increased power reliability	Community power outages	Hours/ year	AVEC SCADA data
Decrease in unsubsidized electricity cost	Avoided cost of fuel per kWh produced versus IPP sales price	$1,872	Electricity bills/ Annual PCE reports

Old Harbor Hydroelectric Project Community benefits plan

- **Increase grid and community resiliency while lowered emissions and providing *Tribal Energy Sovereignty in our remote, rural village***
- **Eliminating electricity and water shut offs for residents of Old Harbor**
- **Utilize IPP profits for O&M costs and all remaining funds will be allocated to cover local water and sewer bills and provide an annual energy rebate paid directly to the utility company AVEC on behalf of the residents.**
- **Providing training & employment opportunities**
- **By demonstrating the benefits of this project through a unique arrangement of using Tribal IPPs to subsidize utility costs to local households, this project aims to be replicable throughout rural Alaska Villages**

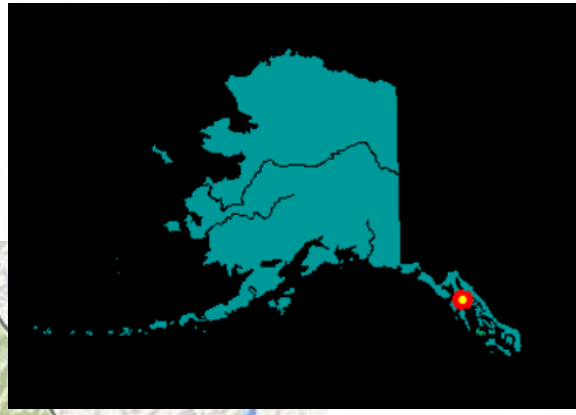
Thayer Creek Hydroelectric

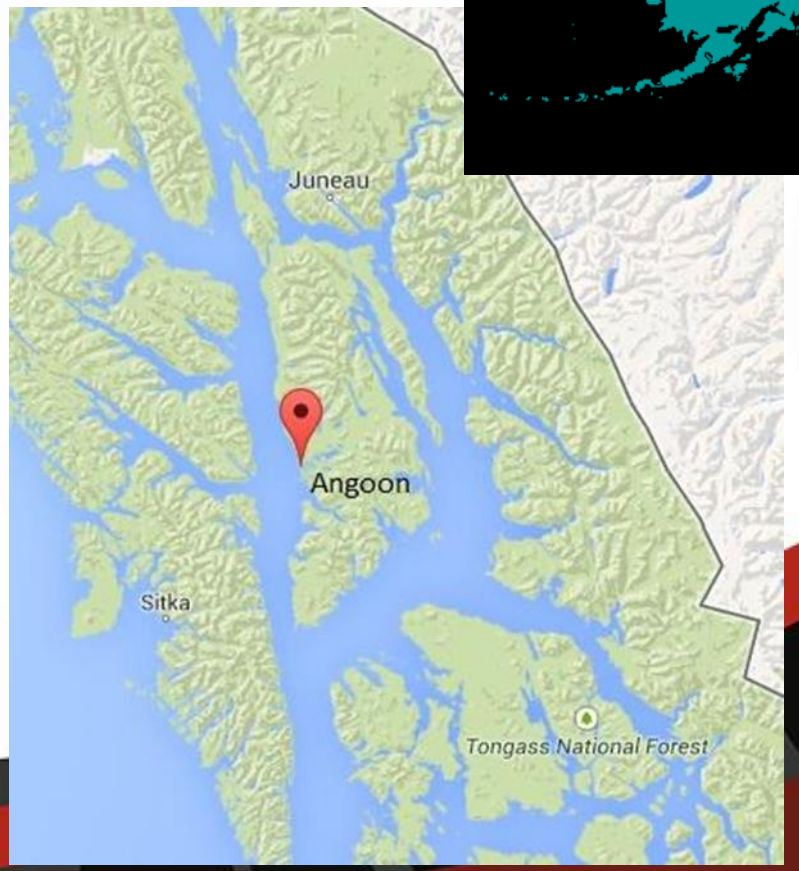
Devany Plentovich
Deer Stone Consulting

KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

Angoon and Kootznoowoo, Inc.

- Angoon (pop. 450) is the ancestral homeland of the Tlingit Xóotsnoowe'di (Bear Fort People), located on Admiralty Island and in the Kootznoowoo Wilderness.
- Kootznoowoo, Incorporated was established under terms of the 1971 Alaska Native Claims Settlement Act.

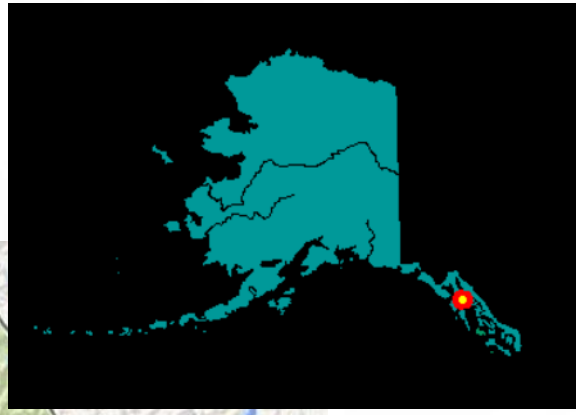


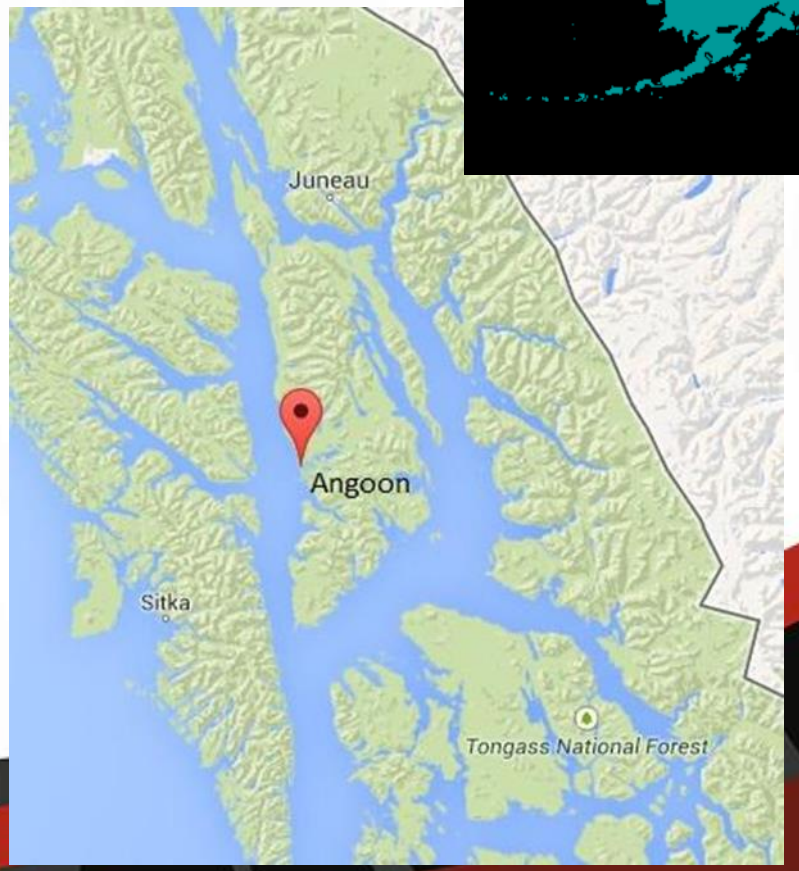


KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

Angoon and Kootznoowoo, Inc.

- **Kootznoowoo is the Alaska Native Corporation for the village of Angoon.**
- **Currently has more than 1,100 shareholders primarily of Tlingit Indian descent.**





KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

The Beginnings of Thayer Creek Hydro

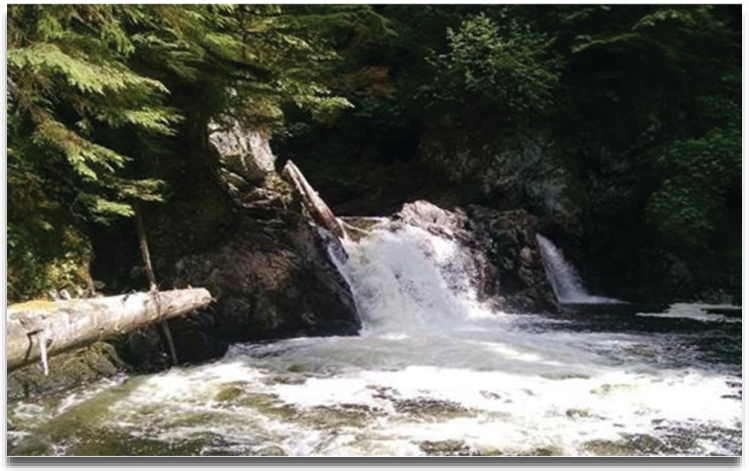
- During the 1980 Alaska National Interest Lands Conservation Act negotiations, Angoon agreed to sacrifice access to their traditional lands, as well as the economic benefits of logging to allow the establishment of Admiralty Island National Monument.

- In exchange, Kootznoowoo was granted exclusive rights to develop hydroelectric resources at Thayer Creek.

KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

THAYER CREEK HYDROELECTRIC PROJECT

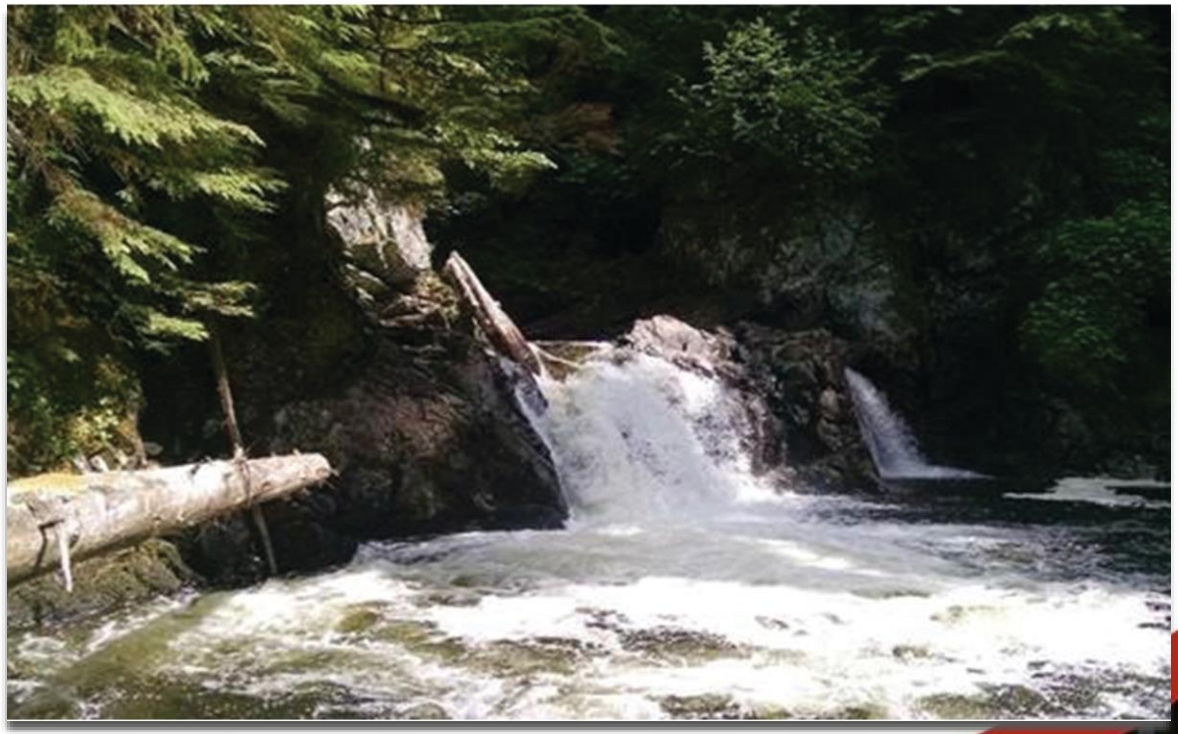
- **Run-of-the-River – designed to fit within a barrier falls**
- **Can replace virtually ALL diesel generation needed for Angoon's electrical needs**
  - **128,500 gallons displaced for electric generation**
  - **Excess Hydro for Electrification Opportunities – 130,000 gallons of heating oil**



KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

THAYER CREEK HYDROELECTRIC PROJECT

- **Reduce rates across all Inside Passage Electric Cooperative communities**
- **Economic Development Opportunities**
- **Total project costs: $33,649,384**
- **Sub-recipient – Inside Passage Electric Cooperative**



KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

PROJECT DESIGN

- 19-foot-high by 55-foot-wide concrete diversion structure
- Located above the barrier falls
- 850 KW turbine generator
- 12.5 kV overhead transmission line
- Six-mile access road
- Half a mile of sub-marine cable in a microtunnel
- Annual generation of 5,000,000 to 5,500,000 kWh (three times current load)

KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

Community Benefits

- Stabilized and reduced energy costs
- Increased community sustainability by spurring commercial and industrial growth with excess hydro and lower electricity rates
- Job training resulting in a better equipped local workforce
- Creation of about 30 jobs throughout the 4-year construction project

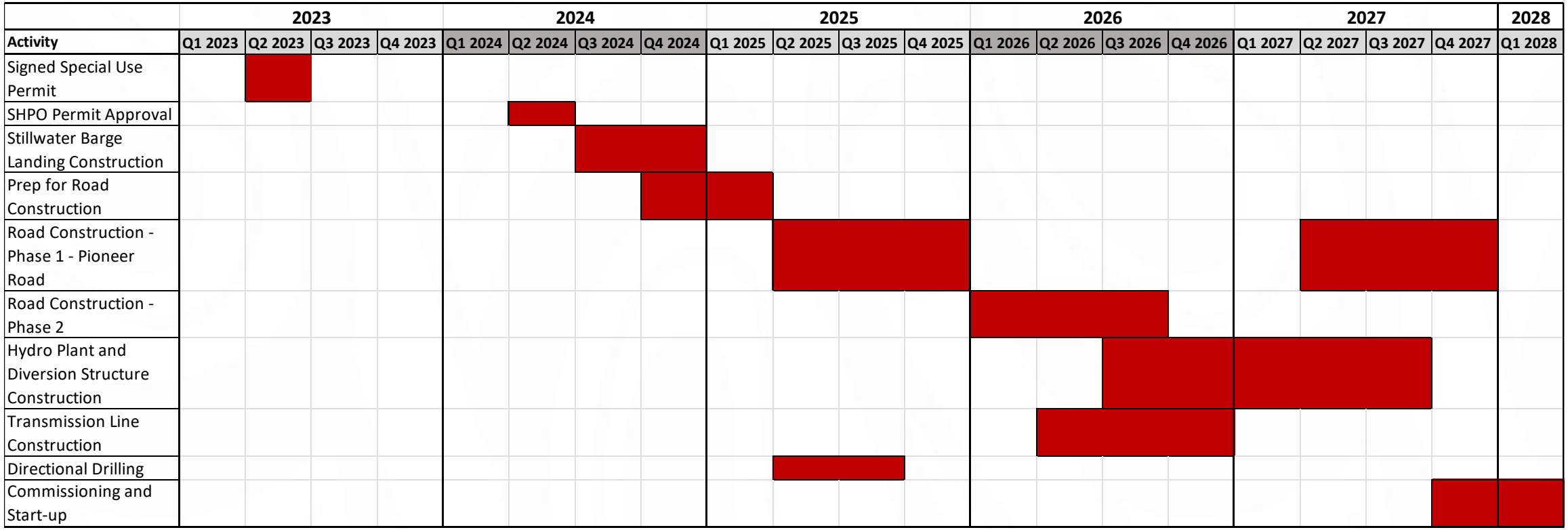
KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

Community Benefits - continued

- Significantly reduced diesel emissions and improved air quality for our vulnerable population
- Reduced shipping and handling of diesel fuel to reduce the possibility spills
- Improved microgrid resiliency by adding a hydro facility to supply the entire community load

KOOTZNOOWOO, INC.
FORTRESS OF THE BEARS

Thayer Creek Project Timeline



Community Benefits Plans

Prioritizing Community Benefits in OCED Projects

OCED **requires** applicants to include a Community Benefits Plan (CBP) to help ensure broadly shared prosperity in the clean energy transition.

By **prioritizing community benefits**, we can ensure the next chapter in America's energy story is marked by greater justice, equity, security, and resilience.

Community & Labor Engagement

Diversity, Equity, Inclusion, & Accessibility

Investing in the American Workforce

Justice40 Initiative

Next Steps & Resources

Get Involved

How could this project impact me?

Learn more about OCED's Community Benefits Plan Framework →

Is there an ERA project near me?

Learn more about the selected projects here →

Project selected

WE ARE HERE

Announcement and Negotiations
Projects have been selected, but awards have not been made

What is an ERA project?

Learn more →

Project awarded

NEPA engagement during phase 2 →

1 ~5 years

2 ~5 years

3 ~2-4 years

4 ~2-4 years

Anticipated phases

Phase 4: Ramp-Up & Operate
Community Benefit Commitments Public

Phase 3: Install, Integrate, Construct
Community Benefit Commitments Public

Phase 2: Project Development
Community Benefit Commitments Public

Phase 1: Project Planning
Community Benefit Commitments Public

Ongoing community engagement throughout each phase

Learn more about project phases →

When are the ERA project-specific briefings?

Learn more and register here →

How do I stay informed?

Sign up for updates →

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Community Benefit Commitments Public
Go/No-Go Decisions

Feedback Session

Ground Rules for Discussion

Submit questions using the Q&A feature

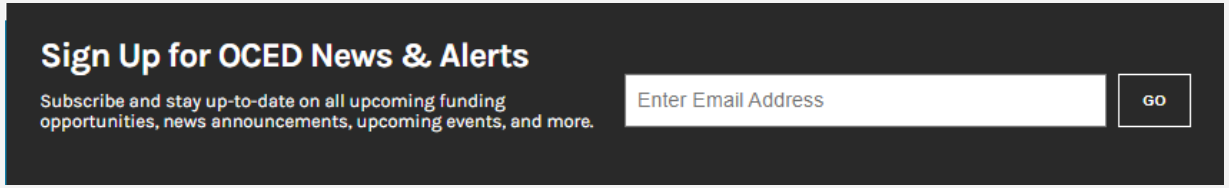
Reserve judgement

One idea at a time

It is okay to build on the ideas of others- Clarifying questions are okay

For more information

- **For questions regarding ERA projects in Alaska**
  Alaska_ERA2970@hq.doe.gov
- **OCED Website & Newsletter Sign-up**
  energy.gov/oced
  Scroll to bottom to sign up here:



- **OCED Exchange (RFIs, NOIs, and FOAs)**
  oced-exchange.energy.gov
- **Follow us on LinkedIn**
  linkedin.com/company/doe-oced/

Resources

- **ERA Program**
  - OCED ERA Program Webpage
  - ERA Selections for Award Negotiations | Department of Energy
  - Federal Energy Funding for Rural and Remote Areas: A Guide for Communities
  - Rural or Remote Areas Geospatial Dashboard
- **Justice40 Initiative**
  - https://www.energy.gov/diversity/justice40-initiative
- **Energy Justice Dashboard (BETA)**
  - https://energyjustice.egs.anl.gov/
- **Climate and Economic Justice Screening Tool**
  - https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

Thank you!

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For more information, please visit energy.gov/OCED