

Case Studies in Tribal Partnerships

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Agenda

Newtok Relocation

- Project Background
- Status Update
- Partnership Structure

Northwest Arctic Borough Community Utility Assistance Program

Rural Alaska Tribal Technology Development

- P.A.S.S.
- Thermosiphon Modification

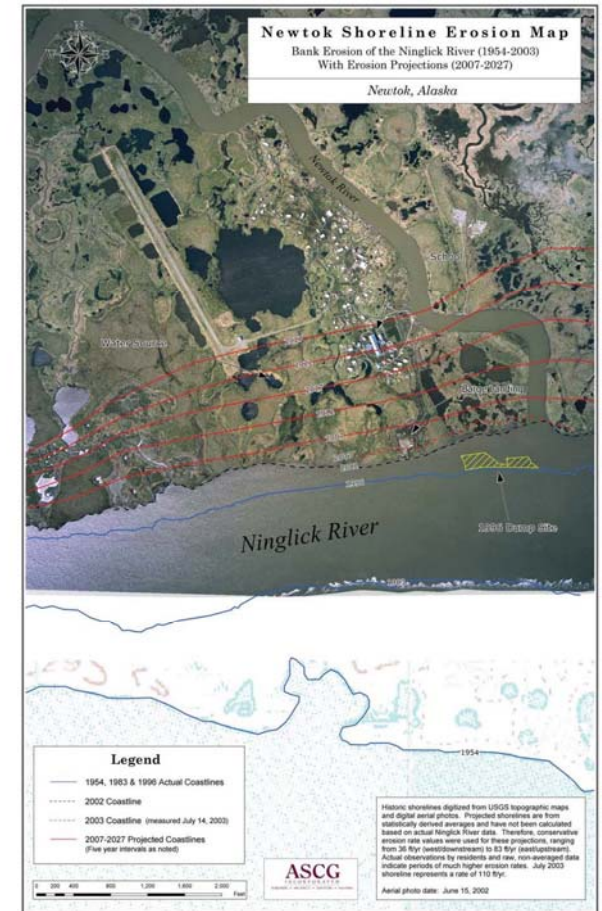


What's Happening to Newtok: Environmental Conditions

Permafrost Degradation

Flooding – Increasing Frequency

Erosion - ~80 feet per year



What's Happening to Newtok

Limited Investment Newtok Site
Infrastructure and housing for 20 years

- Insufficient Quantity, Quality of Housing
- No Water and Sewer
- Degrading Boardwalks
- Power Plant Brownouts

Mertarvik Development Begins – 2007



Previous Relocation Accomplishments

Strategic Management Plan – How to Relocate

Mertarvik Development

- Housing (7 Units)
- MEC Foundation
- Shallow Draft Barge Landing
- Water Well
- Scattered Geotechnical, Survey, Water Quality, Bathymetry, Wind Study
- Airport Layout Plan



Newtok Village – ANTHC Relationship: Finalize Community Layout

Iterative, Community Led Process

What to Build

Where to Build it

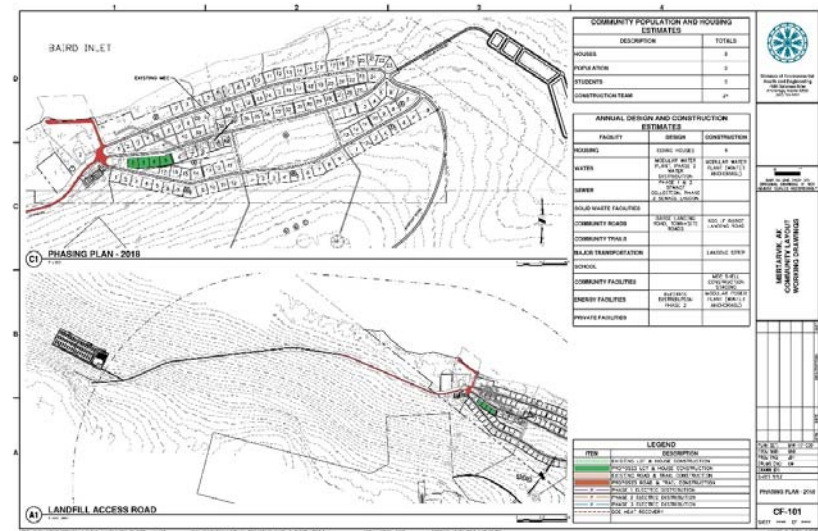
Why

Finalize and Formalize the Plan

Survey, Geotechnical, Platting, Design



- What gets built first
- When does it get built
- How does it get built
- How to pay for it
- Why



Newtok Village – ANTHC Relationship: Management of Design and Construction

Select Contractors for Design and Construction

Coordinate and Align Design and Construction

-7 Different Design firms

Gravel Production – Calista Quarry

-Developed by Brice Inc.

Mertarvik Master Builder

-UIC Construction.



Newtok Village – ANTHC Relationship: Funding Acquisition

Acquire Funding Following Master
Implementation Plan

Partner on Grant Development

- Newtok Village

- ANTHC Environmentally Threatened
Communities Grant Center



Master Implementation Plan: 2019 Goal

Establish Year Round Occupied Community

~1/3 Population Relocated

-Reliable Electricity

-Education Facility

-Emergency Landing Strip

-Self Haul Water

-Portable Alternative Sanitation System

-Sufficient Fuel Storage

-Landfill

-21 Occupied Houses



Master Implementation Plan: 2023 Goal

Entire Population Safely Relocated

- DOT Airport
- Full School
- Health Clinic
- Partial Running Water/Sewer
- Partial Newtok Clean Up
- 65+ Homes



Master Implementation Plan: 2027 Goal

Full Services Completed

- Eliminate Overcrowding
- Accommodate Population Growth
- Full Water and Sewer
- Renewable Energy
- Sustainable Economic Development
- Trail system
- Support Infrastructure Established





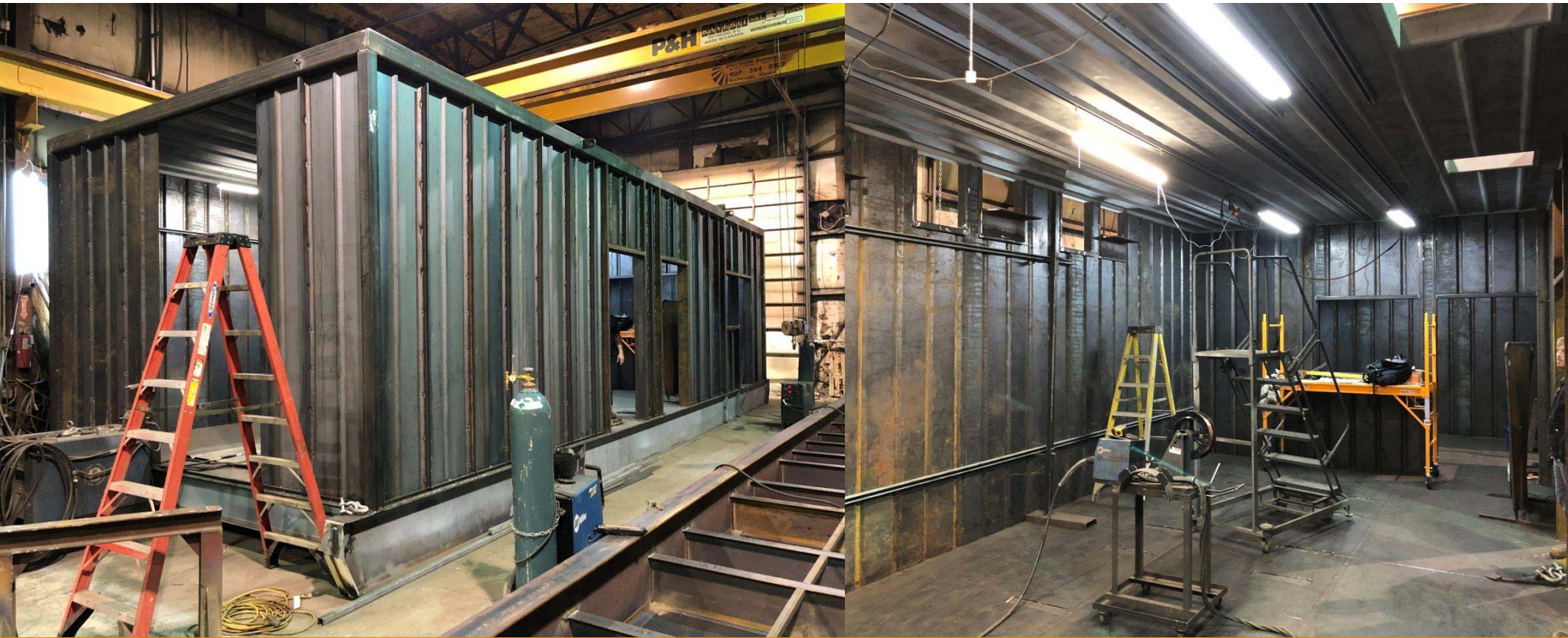
Recent Construction Progress - Quarry



Recent Construction Progress – Mertarvik Evacuation Center



Recent Construction Progress - Housing



Recent Construction Progress – Power Plant



Recent Construction Progress – Emergency Landing Strip

Upcoming Mertarvik Construction – Spring 2019

Gravel Production

Complete Landing Strip Extension

Complete Barge Landing Access Road

Expand Laydown Area

Safety Improvements for MEC

Access Trails to House Pads

13 House Pads

Set up UIC Camp, IRT Camp

Camp Water / Sewer



Upcoming Mertarvik Construction – Summer 2019

Landfill

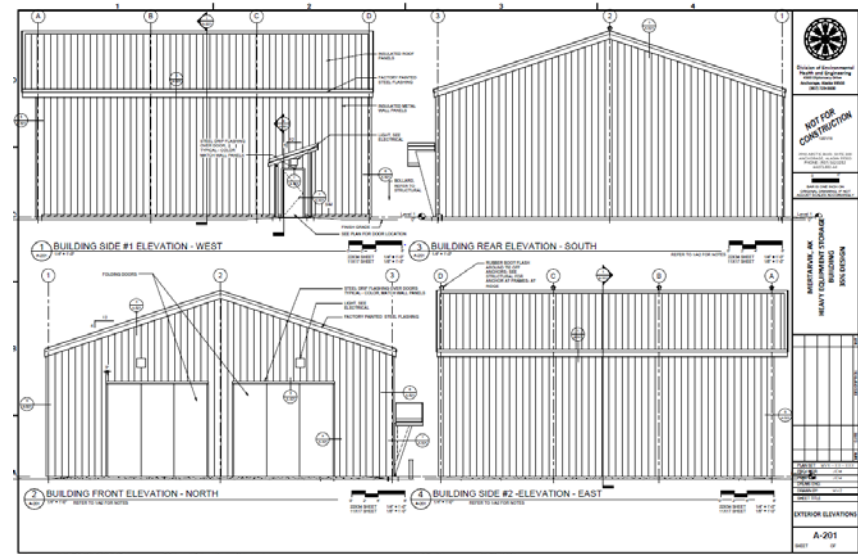
Heavy Equipment Shop

Complete 4 Houses

One Mile of Roads

Power Plant

Gravel Production



Upcoming Mertarvik Construction – Fall 2019

Complete 9 Houses

Interior of MEC – Pioneering School

Water Plant

Limited Water Distribution System

Portable Alternative Sanitation Systems

Electric Distribution System



2020 Projects Funded

Bulk Fuel Farm

2 Duplex Housing Units

Heat Recovery System

DOT Airport

Newtok Phase 1 Demolition and Clean Up



2020 Projects Planned

Still Require Funding

- 16 Additional Housing Units
- Road and Powerline Extensions



Newtok Village – ANTHC Partnership: Cooperative Project Agreement

NVC Responsibilities

- Council Advanced Pre Approval of Projects
- Input on Contractor Selection
- Local Coordination and Support

ANTHC Responsibilities

- Regular Meetings With Local Relocation Coordinator
- Monthly Council and Community Meetings
- Steering Committee Coordination
- Oversee Design and Construction Activities
- Coordinate Regional, State, Federal Partners



Newtok Village – ANTHC Partnership: Memorandum of Agreement – Term Contractor Utilization

Allows NVC use of ANTHC's Previously
Competitively Selected Term Contractors

Requires Individual Agency Approval

Benefits

- Reduces Procurement time and cost
- Allows support for review and selection of contractors
- Allows for support of invoice processing and review and contract management



Newtok Village – ANTHC Partnership: Coordination with IRT



State of Alaska Partnership – Coordination and Technical Assistance

DCRA

- Quarterly Coordination Meetings
- Web Hosting
- Newsletter Distribution
- Move Out – Move In Manual Support

Alaska Energy Authority

- Newtok Power Plant troubleshooting and repair
- Commissioning of Mertarvik Power Plant

DNR/DEC

- Permitting, Regulatory Support, Platting and Recording

DOT

- Airport Design and Management



State of Alaska Partnership – Funding

Previous Funding

- Mertarvik Evacuation Center
- MEC Access Road
- Barge Landing Access

Current Funding

- Housing Matching Funds
- Transportation Matching Funds
- DMVA HMGP Buyout Funds



Other Newtok Partnerships – Denali Commission and Federal Partners

Denali Commission

- Coordinate Federal Agencies
- Primary Funder
- Non-Federal Match Eligible

BIA, HUD, FEMA, DOE

Foundation Funders:

- UMCOR
- NFWF

USACE, FAA

- Non-Newtok / ANTHC Managed Projects



Other Newtok Partnerships – Regional Partners

YKHC

- Clinic Operations
- Environmental and Public Health Program
- Water and Sewer System Design Review

LKSD

- School Operations
- Displaced Resident Support in Newtok

AVCP RHA

- Housing Construction
- Housing Policy

AVCP Inc.

- Training



Community Utility Assistance Program

Project Background

- Partnership between NWAB-ANTHC-Maniilaq and rural communities in the region to support Water and Sewer
- Funded by NWAB with PILT from Red Dog Mine

Goals

- Reduce Water and Sewer Emergencies
- Reduce Water and Sewer Rates
- Improve Career Opportunity for Utility Operators
- Improve Competitiveness and Eligibility for Capital Funding



Community Utility Assistance Program

Partnership Structure:

- NWAB Pays Operator Salaries, Provides Training, Purchases Fuel for regional utilities
- ANTHC Manages Billing and Payroll, Oversees Maintenance and Operations and Provides Training
- Local Communities Hire Operators, And must meet State of Alaska “Best Practices” requirements as well as lower rates to customers
- Maniilaq Provides Operations and Maintenance Support, Office Space for ANTHC Staff



Community Utility Assistance Program

Goals

- Reduce average residential water/sewer rates by two-thirds
- Reduce emergencies through improved maintenance
- Provide regional training and support
- Increase construction grant eligibility



Community Utility Assistance Program

State Partnership

- Based around Best Practices evaluation criteria developed by DEC, DCRA
- Improves scoring and fulfillment of DEC Criteria
- Training and Support conducted with DEC Remote Maintenance Worker, and DCRA Local Government Specialist Programs



Community Utility Assistance Program

Results

- Maniilaq Communities have highest average Best Practices scores in the State
- Average Water and Sewer Rates have been reduced 66%
- Preventive Maintenance Plan Compliance Improves from 27% to 100%
- No emergency support required to date



Portable Alternative Sanitation System

Problem

- Some Tribal homes, communities too expensive or too challenging Environment to serve with piped water and sewer for traditional funding programs
- Existing non-piped solutions expensive, ineffective, too complex, or inappropriate for Cold Climate

Solution:

- Simple Technology
- Lower Capital Cost
- Low Operations Cost



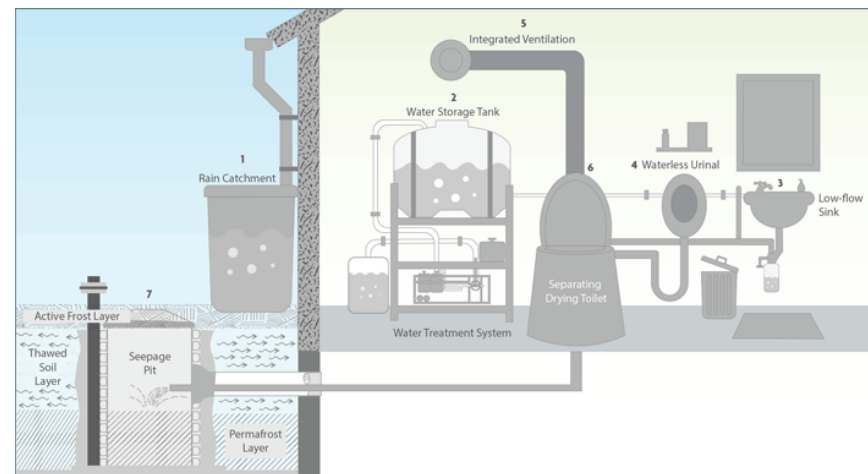
Portable Alternative Sanitation System

Project Description:

- In Home Simple Water Treatment System
- Separating Toilet
- Local Liquid Disposal
- Drying Solid Waste w/ Fan

Benefits

- Access to Hand Washing
- Clean Water for Drinking
- Improved Indoor Air Quality
- Reduced Waste Hauling
- Portable, Affordable



Portable Alternative Sanitation System

Partnerships

- Funded by ANTHC, TCC, IHS, UMCOR

Design, Installation, and Testing by

- ANTHC, LifeWater, Campwater, CCHRC

Patented

Manufactured in Alaska: Silverline LLC

Installed:

- Kivalina, Alatna, Allakaket, Chalkytsik , Oscarville



Passive Thermosiphon Conversion

Project Background

Problem

- Failing passive thermosiphons around rural Alaska due to changing climate
- Infrastructure at Risk
- Existing solutions are expensive to build and maintain

Solution

- Develop rural Alaska appropriate solution
- Low Technical Complexity
- Low Capital Cost
- Low Maintenance



Passive Thermosiphon Conversion

Funded by ANTHC

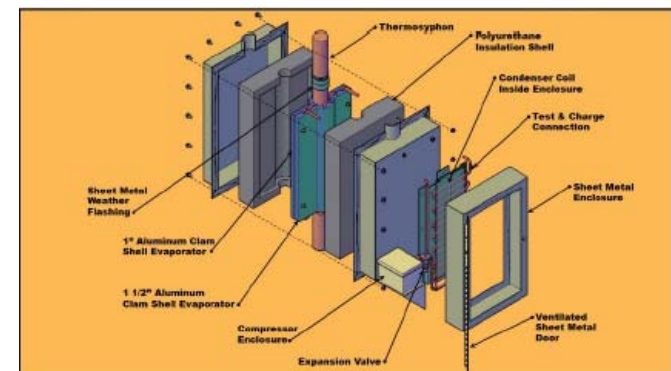
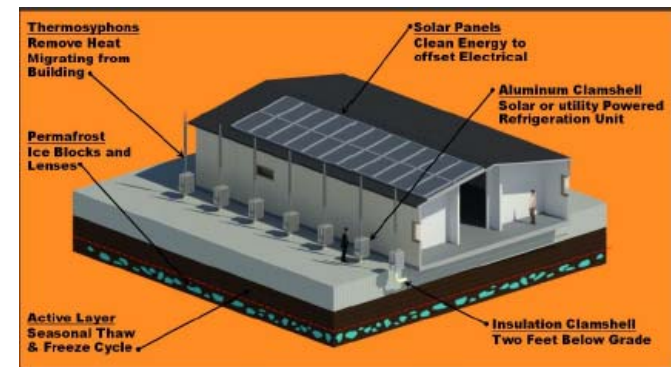
Partners with CCHRC, Life Water Engineering

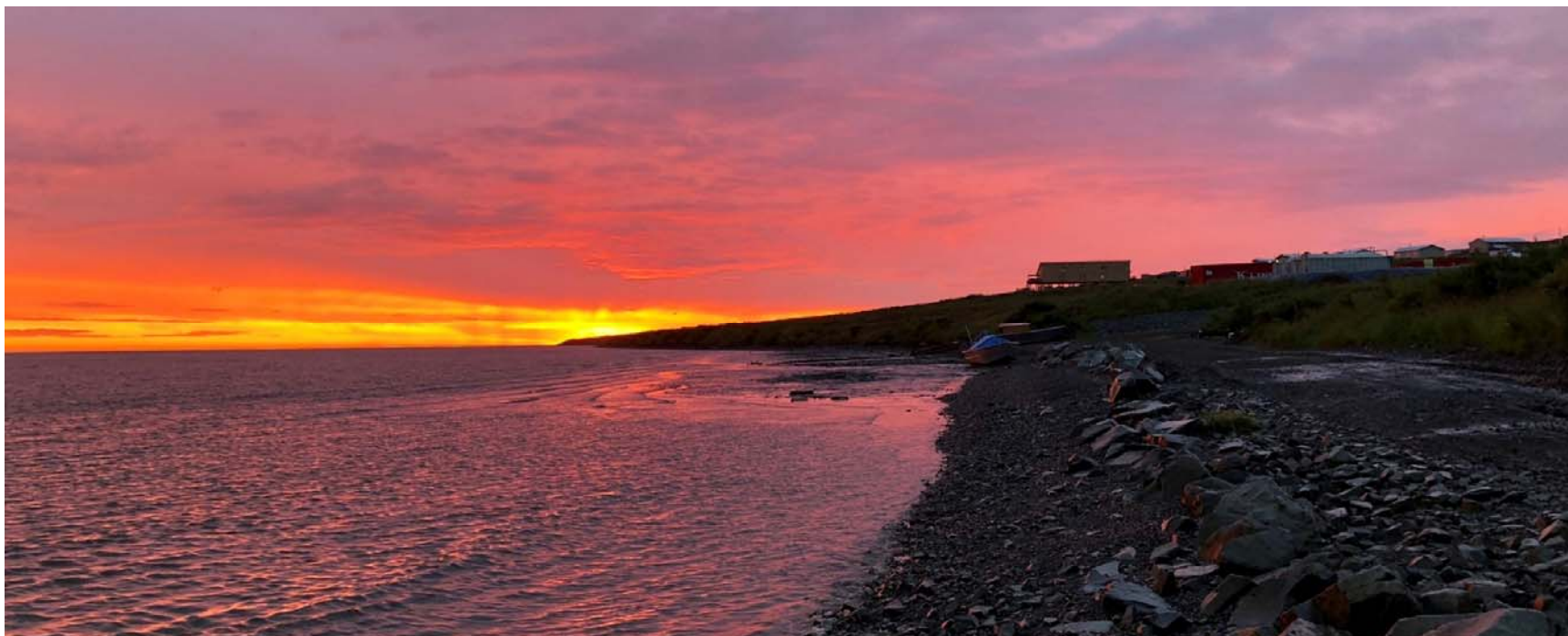
Ideal Solution for remote applications

- Currently in Prototype Stage
- Expected for Application in 2020

Patent Acquisition Underway

Planned for Local Manufacture





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