

Tribal Weatherization Training

In the Aleutian and Pribilof Islands

Tribal Energy Program Review

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The Tribes & Project Overview: This project entails on-site weatherization, energy conservation education and a home energy and safety review in the communities of Akutan, Atka, False Pass, King Cove, Nelson Lagoon, Nikolski, Sand Point, St. George, St. Paul and Unalaska, and in support of 13 Tribes in the region. Local residents/energy technicians will be trained to continue all three aspects of the project: weatherization, energy conservation education and a home energy and safety review.

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LOCATION

- Anchorage to Nikolski is 916 air miles for ~\$2,000 rt.
- Extreme and cold weather
- Flight delays common

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Communities	KwH Cost	KwH (1,000,000)	Diesel Demand (1,000 gals)	KwHs Per Gallon
King Cove	0.26	3.79	162	23
Akutan	0.32	0.52	44	12
Unalaska	0.36	34.48	2,194	16
False Pass	0.42	N/A	N/A	N/A
St. Paul	0.46	4.59	389	12
Sand Point	0.52	4.03	317	13
AVERAGE	0.53	2.21	177	14
Nikolski	0.60	N/A	N/A	N/A
Cold Bay	0.64	2.53	213	12
Adak	0.71	1.54	213	7
Nelson Lagoon	0.74	0.38	33	12
Atka	0.77	0.35	42	8

National average \$0.1021/KwH
Denver average \$0.085/KwH
Anchorage average \$0.14/KwH

Objectives and Participants

OBJECTIVE 1: Identify and hire local community/Tribal members that desire to learn weatherization techniques.

OBJECTIVE 2: Train Energy Technicians in methods of weatherization assistance.

OBJECTIVE 3: Develop active listing of regional residential homes that require weatherization.

OBJECTIVE 4: ET's will perform weatherization on identified regional residential homes.

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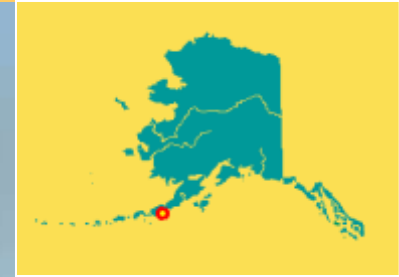
ST. GEORGE ISLAND *Population 89*

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SAND POINT

Population 951



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KING COVE

Population 723



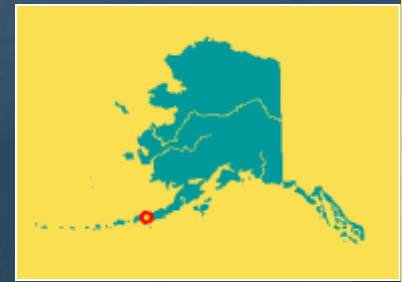
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FALSE PASS

Population 50



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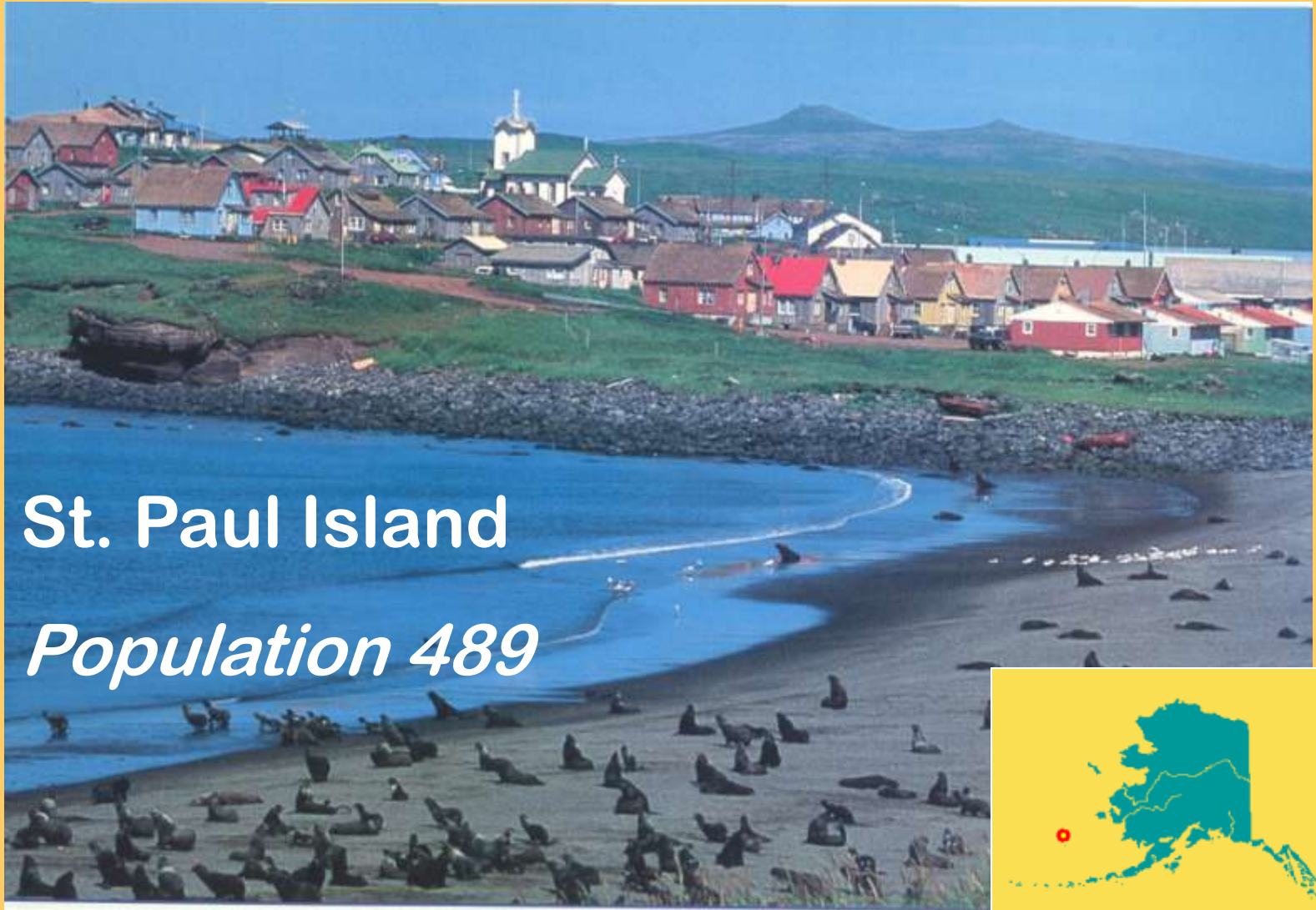
Nikolski, Umnak Island

Continuously inhabited for over 10,000 years

Population 39

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St. Paul Island
Population 489



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The Alaska Craftsman Home Program, Inc.

Workshops

- Advanced Cold Climate Home Building Techniques
- Advanced Cold Climate Heating & Ventilation Systems
- BPI Building Analyst I
- Advanced Building Science & Retrofit for Energy Efficiency & Cold Climates
- Energy Conversations for New Construction Marketing
- Air Tightness & Ventilation
- Homeowner Retrofit/Energy Conservation
- Basic Blower Door Training
- Advanced Blower Door Training
- Combustion Safety Training
- Understanding Heating Systems

Homeowner retrofit/energy conservation classes:

Building Science Basics— (2 hours) This class provides information on how the house works as a system. Discussion includes information on the dynamics of how a home works and the management of heat, air and moisture. Issues described include stack effect, relative humidity, pressure differentials, air movement. The goal is to achieve comfort, energy efficiency and durability in the home.

Air Tightness—(2 hours) A discussion on reasoning behind why a home needs to be air tight. This how-to workshop provides information on normal areas of air leakage, techniques for air sealing and air sealing products. Visual examples of specific air leaks and methods for sealing are provided, as well as samples of the actual products.

Ice Dams – (2 hours) Information on the cause of ice dams on residences is presented with visual examples of different areas of concern. An explanation of air and moisture movements in cold attics and minimum standards for attic ventilation is discussed. Examples of retrofit techniques and products are provided. Methods for mitigation of ice dams are illustrated for participants.

Lighting and Appliances – (2 hours) The focus of the first half of this workshop is Energy Star appliances; refrigerators, dishwashers, washers and freezers. Discussion includes what the Energy Star seal means regarding energy efficiency. The second half of the workshop deals with energy efficient lighting, including compact fluorescent lights and Light Emitting Diode bulbs. Examples and demonstrations of the light bulbs are provided along with energy saving percentages.

Heating and Hot Water – (2 hours) This class discusses energy efficient heating appliances including boilers, forced air furnaces, room heaters and hot water heating appliances. ACHP emphasizes sealed combustion, direct vent combustion equipment of all kinds. Each type of heating equipment is discussed and evaluated.

Doors and Windows - (2 hours) Discussion and demonstrations of energy efficient windows and doors are presented with examples of product type, cross sections of the construction of the windows and presentation of R- Value and U-Factor. Installation techniques and products are also presented and discussed.

Insulation – (2 hours) The areas of a house that need insulation are discussed along with types of insulating products. Standard installation techniques and minimum code requirements compared to optimum insulation levels are discussed. Visual as well as actual examples are presented.

Ventilation – (2 hours) The focus of discussion in this workshop center on air movement within the house and the impact on occupants. Discussion on whole house ventilation begins in the crawl space and encompasses the entire house. Minimum air change requirements are discussed, and the benefits of mechanical ventilation versus natural ventilation are discussed. The course includes a 25 minute video stressing the importance of indoor air quality.

Project Status

The Akutan technician has been hired. The Tribes and community have been enlisted to assist in identifying potential hires.

The Akutan technician and I attended a training session October 9-10, 2010 in Wasilla.

Energy conservation presentations at the Tribal Leader's Summit, Juneau; Alaska Tribal Conference on Environmental Management, Anchorage; Aleutian Pribilof Islands Regional Energy Summit, Anchorage; Aleut Corporation Annual Meetings, Village Seminar, Anchorage.

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Lessons Learned

It's difficult finding staff to hire in our villages; most are already employed.

Setting up training sessions with minimum attendance is problematic.

The regional housing authority was very threatened by this project.

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Activities Yet to Be Completed

Identify, hire and train additional staff.

Continue training of Tribal staff and community members on energy conservation.

Homeowner retrofit/energy conservation classes in communities, but we will have a session in King Cove in November..

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Related Activities

**Aleut Region Energy Plan: Working
Together to Secure Low-cost Sustainable
Energy**



**Aleutian Pribilof Islands Regional
Energy Summit
April 24-25, 2010
Anchorage, Alaska**

The charge for the Conservation Committee was too:

- Educate community members in region how to conserve energy
- Utilize local resources – IGAP, Tribal/City leadership to lead and coordinate conservation program activities.
- Motivate community members to conserve energy and be energy wise like the communities have become conscientious about recycling and cleaning up their community.
- Implement conservation programs; the continuation of AHA weatherization programs, APIA's conservation education project, development of energy efficient greenhouses for food production, and IGAP energy conservation projects.
- Raise awareness that Energy Conservation practices by consumers and weatherization improvements of structures reduce energy consumption.

Recoverable Energy (Waste Heat) from Power Plant

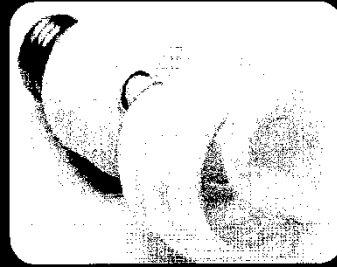
King Cove is avoiding using 25,000 gallons of diesel fuel annually at the school, and they have the potential to save the adjacent clinic 5,000 to 10,000 gallons annually.

Alternative Homes: Anaktuvuk Pass Prototype Home (-2 F on Tuesday)



Energy Savers Tips Booklet

ENERGY SAVERS TIPS FOR RURAL ALASKA



{ Ways to **Save Energy** in your home



Nikolski energy efficient green house project for growing local food items. A proposal for a Sand Point greenhouse is being developed.



Energy Conservation Technicians

- Pre-pay Metering
Watch \$ Roll Down
- Phantom Load
Power Strips & Unplug
- Efficient Appliances
Replace Old & Even
“New” for Green Star

