

Village Energy Efficiency Program
AEA VEEP Grant # 7520001 Administered by Alaska Building Science Network
Kokhanok Final Report
Grant Amount: \$100,000



Community Summary

8 community buildings and teacher housing units received energy efficient weatherization and heating upgrades as follows: Village Council Office, Community Building, EPA Office, Pump House, Elementary School, School Duplex 1, School Duplex 2, School Duplex 3

Retrofits Completed: February 2012

Village-Wide Energy Efficient Weatherization and Heating Retrofit Summary:

| | |
|--|-----------------------|
| • Projected Annual Electrical Savings (kWh): | 1,248 |
| • Projected Annual Electrical Cost Savings: | \$1,123 ¹ |
| • Projected Annual Heating Fuel Savings (gallons): | 3,332 |
| • Projected Annual Fuel Cost Savings: | \$26,190 ² |
| • Total Projected Annual Energy Cost Savings: | \$27,313 |
| • Total village wide in-kind contribution: | \$5,263 |
| • Total project cost including In-kind contribution: | \$105,263 |
| • Simple Payback (including In-kind contributions): | 3.85 years |

¹ kWh Rate [used to calculate electrical cost savings] for Weatherization & Heating Measures (AkWarm Library): \$0.90

² #2 Heating Fuel Rate [used to calculate heating fuel savings] (AkWarm Library): \$7.86/gal

KOKHANOK VILLAGE COUNCIL OWNED BUILDINGS AND FACILITIES

Village Council Office

Weatherization Retrofit Summary:



- Installed single programmable thermostat.
- Installed R-38 loose-fill insulation in attic with Standard Truss.

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- Annual energy savings projection: 279 gallons
 - Estimated Annual Heating Fuel Cost Savings: **\$2,193**

EPA Office

Weatherization Retrofit Summary:



- Air sealed building to reduce air leakage.
- Installed R-38 loose-fill insulation in attic with Standard Truss.

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- Annual energy savings projection: 652 gallons
 - Estimated Annual Heating Fuel Cost Savings: **\$5,125**

Community Building

Weatherization Retrofit Summary:



- Filled empty 2x6 cavity in floor with R-21 fiberglass batts.
- Installed digital CO detector.
- Programmed thermostats on monitor heaters.

- Annual energy savings projection: 663 gallons
- Estimated Annual Heating Fuel Cost Savings: **\$5,211**

Pump House

Weatherization/Heating Retrofit Summary:



- Replaced existing community water heating boiler with energy efficient boiler, including reset controls.
- Air sealed building to reduce air leakage.

- Annual energy savings projection: 497 gallons / 1248 kWh
- Estimated Annual Energy Cost Savings: **\$3,906 (heating fuel) / \$1,123 (electricity)**

LAKE AND PENINSULA SCHOOL DISTRICT OWNED BUILDINGS AND FACILITIES

Elementary School

Weatherization Retrofit Summary:



- Installed single programmable thermostat.
- Added R-30 fiberglass batt insulation to crawlspace perimeter.

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- | | |
|---|----------------|
| • Annual energy savings projection: | 196 gallons |
| • Estimated Annual Heating Fuel Cost Savings: | \$1,541 |

School Duplex 1

Weatherization Retrofit Summary:

- Installed single programmable thermostat.

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- | | |
|---|--------------|
| • Annual energy savings projection: | 27 gallons |
| • Estimated Annual Heating Fuel Cost Savings: | \$212 |

School Duplex 2

Weatherization Retrofit Summary:



- Installed single programmable thermostat.
- Installed R-30 fiberglass batts on perimeter of crawlspace.

- Annual energy savings projection: 291 gallons
- Estimated Annual Heating Fuel Cost Savings: **\$2,288**

School Duplex 3

Weatherization Retrofit Summary:



- Installed single programmable thermostat.
- Air sealed building to reduce air leakage and repaired crawlspace vapor barrier.
- Added R-38 fiberglass blow-in insulation to attic with Standard Truss.
- Installed R-40 rigid foam board to crawlspace exterior hatch.

- Annual energy savings projection: 727 gallons
- Estimated Annual Heating Fuel Cost Savings: **\$5,714**

Kokhanok, In-Kind Contribution Tracking Record - ABSN Energy Efficiency Projects:

| In-Kind Item | Dates | Hours Contributed | Hourly Wage | Value / Amount | Notes |
|---|----------------------------|-------------------|-------------|-------------------|---|
| Staff time for project contact, introduction & review of intro materials | | 2 | \$20.00 | \$40.00 | Number of entities x 1 hour each |
| Staff time for Attending teleconference | 10/26/10 | 2 | \$20.00 | \$40.00 | IRA Staff Time |
| Staff time for Attending teleconference | 10/26/10 | 2 | \$20.00 | \$40.00 | School Time |
| Conservative village office administrative percentage of total project cost less ABSN Admin %. Total project cost = \$100,000/village - (our admin percentage, (around 14%) Approx: \$14,000) = \$86,000 x 4% = \$3,440 (this 4% village admin cost estimate is spread across all entities we work with for the course of the grant for completing all energy efficiency measures. These are for cumulative, otherwise unaccounted time expense for village- based project support. | Aug '10 through Completion | | | \$3,440.00 | Each time we call, email, or fax a village entity, someone receives the communication, reviews and/or forwards the information, follows-up on requests, etc. Whether it is to set-up a teleconference, verify maintenance staff participation in lighting or boiler trainings, set-up in-kind lodging and transportation, lighting trainings, track a shipment, verify completion of lighting in a given building, ship lamps and ballasts out of the village for recycling, request a labor reimbursement agreement, or invoice etc. Village expenses for phone charges, copying and fax costs, office supplies, etc. are part of this amount. |
| Lodging for ABSN Field Managers | 8/1-5/2011 | 6 | 50 | \$300.00 | 4 nights for Emmett and 2 nights for Dan, both at \$50/night |
| Transportation and fuel costs | 8/1-5/2011 | | | \$494.32 | Truck rental \$100 4 days and fuel \$94.32 |
| Other In-kind (School District) | | | | \$908.52 | Materials, equipment for weatherization/heating upgrades |
| | | | | | |
| | TOTAL | | | \$5,262.84 | |