Village End Use Energy Efficiency Measures Program ’05 – ’06
AEA Grant # 2195234 Administered by Alaska Building Science Network

Chevak Final Report



Community Summary

14 Community buildings and 21 teacher housing units received energy efficiency upgrades May ’05 - December ’06

City Hall, Community Building, Clinic, Water Treatment Plant / Washeteria, Wastewater Control/Vaccum Building, Public Safety Building, Troopers Apartment, Traditional Council Offices, JVP Building, Chemical Miss-Use Center, Village Corporation Store, Hardware Store & Village Corporation Offices, PHS Bunkhouse, School Gym and 21 Teacher Housing Units

Village-Wide Lighting Retrofit Summary:

- Retrofitted 372 light fixtures village-wide with electronic ballasts and T8 lamps
- Installed: 446 compact fluorescent light bulbs village-wide
- T5 Light fixtures were installed in the school gym
- Pre-retrofit energy use for all lighting: 79,043 watts
- Post-retrofit energy use for all lighting: 35,212 watts
- Energy savings projection: 43,831 watts (43.81 kW)
- **Pre-retrofit to post retrofit energy reduction**: 55 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$21,916	3,432 Gallons	$6,281
7 Hours	$38,352	6,007 Gallons	$10,992
10 Hours	$54,789	8,581 Gallons	$15,703

- Total project cost for village lighting: $ 37,250
- Simple payback (lighting measures only): .97 Years
- Total village wide in-kind contribution: $ 10,805

Additional Energy Efficiency Measures: (Budget Expense: $ 275)

- Programmable Thermostats installed in 6 locations.

Chevak City Owned Buildings

Energy efficient lighting upgrades were completed in seven buildings owned by the City of Chevak.

City owned Buildings - Lighting Retrofit Summary:

- Lighting upgrades completed in January, 2006
- Retrofitted 168 linear fluorescent fixtures with T8 lamps and electronic ballasts
- Installed: 22 compact fluorescent light bulbs
- Pre-retrofit energy use for all lighting: 17,345 watts
- Post-retrofit energy use for all lighting: 9,798 watts
- Energy savings projection: 7,547 watts (7.55 kW)
- **Pre-retrofit to post retrofit energy reduction**: 44 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$3,774	591 Gallons	$1,082
7 Hours	$6,604	1,034 Gallons	$1,893
10 Hours	$9,434	1,477 Gallons	$2,704

City Hall / Post Office

2-lamp electronic ballasts and 32-watt T8 lamps

Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 32w lamps	13w CFL	20w CFL	25w CFL
City Hall	23	0	13	0	5	0	0	1

- Pre-retrofit energy use: 3,440 watts
- Post-Retrofit Energy Use: 2,341 watts
- Energy savings projection: 1,099 watts (1.10 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 32 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$550	86 Gallons	$157
7 Hours	$962	151 Gallons	$276
10 Hours	$1,374	215 Gallons	$394

Notes: Significant de-lamping and use of 25-watt lamps with various ballast combinations resulted in substantial savings for the City Hall / Post Office building.

Community Building

Sparce existing fixture lay out
required 32w lamps & 3-lamp ballasts

Materials Installed	3-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	13w CFL	20w CFL	25w CFL
Community Building	12	0	0	0	0	1

- Pre-retrofit energy use: 1,084 watts
- Post-Retrofit Energy Use: 745 watts
- Energy savings projection: 339 watts (.34 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 31 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$170	27 Gallons	$49
7 Hours	$297	46 Gallons	$85
10 Hours	$424	66 Gallons	$121

Notes: Existing fixture lay outs for this building provided inadequate light for the space. The ABSN lighting plan called for two 32w lamps and 3-lamp ballasts which yielded the maximum light possible for a 2-lamp, normal output fluorescent fixture. Energy use was still decreased by 31% while light levels increased dramatically.

Clinic



Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	3-Lamp Ballasts (3) 32w lamps	13w CFL	20w CFL	25w CFL
Clinic	26	0	5	1	8	0	0	1

- Pre-retrofit energy use: 4,036 watts
- Post-Retrofit Energy Use: 2,608 watts
- Energy savings projection: 1,428 watts (1.43 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 35 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$714	112 Gallons	$205
7 Hours	$1,250	196 Gallons	$358
10 Hours	$1,785	280 Gallons	$512

Notes: City maintenance staff retrofitted with 32 watt T8 lamps to retain adequate light in most areas. Since corridors do not require as much light, they were retrofitted with 25 watt T8s.

Water Treatment Plant / Washeteria



Materials Installed	2-Lamp Ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	13w CFL	20w CFL	25w CFL
Water Treatment / Washeteria	0	27	0	2	0

- Pre-retrofit energy use: 2,364 watts
- Post-Retrofit Energy Use: 1,444 watts
- Energy savings projection: 920 watts (.92 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 39 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$460	72 Gallons	$132
7 Hours	$805	126 Gallons	$231
10 Hours	$1,150	180 Gallons	$330

Notes: 25-watt lamps pushed slightly with 3-lamp ballasts provided light levels to match existing 40 watt T12s. Wattage went from 82 watts to 52 watts per fixture.

Wastewater Control / Vaccum Building

Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	13w CFL	20w CFL	25w CFL
Wastewater Control / Vaccum	0	0	13	0	1	0

- Pre-retrofit energy use: 1,141 watts
- Post-Retrofit Energy Use: 696 watts
- Energy savings projection: 445 watts (.45 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 39 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$223	35 Gallons	$64
7 Hours	$389	61 Gallons	$112
10 Hours	$556	87 Gallons	$159

Notes: 25-watt lamps pushed slightly with 3-lamp ballasts provided light levels to match existing 40 watt T12s. Wattage went from 82 watts to 52 watts per fixture.

Public Safety Building



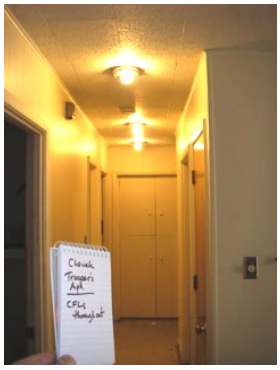
Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	4-Lamp Ballasts 25w lamps	3-Lamp Ballasts (3) 32w lamps	13w CFL	20w CFL	25w CFL
Public Safety Building	0	0	35	0	0	0	4	1

- Pre-retrofit energy use: 4,425 watts
- Post-Retrofit Energy Use: 1,750 watts
- Energy savings projection: 2,675 watts (2.68 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 60 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$1,338	209 Gallons	$383
7 Hours	$2,341	367 Gallons	$671
10 Hours	$3,344	524 Gallons	$958

Notes: Pre-retrofit, this building was lit by all 4 lamp fixtures using a mix of 34w and 25w T12 lamps. Existing fixture layout provided excessive light levels, and many of the existing lamps were burned out. By de-lamping to 2-lamp fixtures 60% overall energy savings was achieved while exceeding pre-retrofit light levels.

Troopers Apartment



Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	13w CFL	20w CFL	25w CFL
Troopers Apartment	0	0	0	3	5	3

- Pre-retrofit energy use: 855 watts
- Post-Retrofit Energy Use: 214 watts
- Energy savings projection: 641 watts (.64 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 75 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$321	50 Gallons	$92
7 Hours	$561	88 Gallons	$161
10 Hours	$801	125 Gallons	$230

Notes: This building was entirely lit by incandescents pre-retrofit, hence the 75% energy savings resulting from CFL installations.

Chevak Traditional Council Owned Buildings

Energy efficient lighting upgrades were completed in three buildings owned by the Chevak Traditional Council

Traditional Council owned Buildings - Lighting Retrofit Summary:

- Lighting upgrades completed by January, 2006
- Retrofitted 47 linear fluorescent fixtures with T8 lamps and electronic ballasts
- Installed: 3 compact fluorescent light bulbs
- Pre-retrofit energy use for all lighting: 1,350 watts
- Post-retrofit energy use for all lighting: 700 watts
- Energy savings projection: 650 watts (.65 kW)
- **Pre-retrofit to post retrofit energy reduction**: 48 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$878	137 Gallons	$251
7 Hours	$1,536	241 Gallons	$440
10 Hours	$2,194	344 Gallons	$629

Traditional Council Offices

Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	4-Lamp Ballasts 25w lamps	20w CFL	25w CFL
Traditional Council Offices	11	0	0	0	2	0

- Pre-retrofit energy use: 1,350 watts
- Post-Retrofit Energy Use: 700 watts
- Energy savings projection: 650 watts (.65 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 48 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$325	51 Gallons	$93
7 Hours	$569	89 Gallons	$163
10 Hours	$813	127 Gallons	$233

Notes: Traditional Council owned buildings had received T8 lighting upgrades prior the VEUEEM grants. This building had a large open lobby area occasionally used for meetings, but little else. The tribal administrator concurred it was not necessary for 16 fixtures to light this largely unused area. We dropped the lighting energy use in this building significantly by taking nearly half the fixtures off-line.

JVP Building

Existing fixture layout provided enough light for surgical procedures

Energy use was reduced by 3i% by simply removing one existing T8 lamp from each fixture

Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	20w CFL	25w CFL	De-lamped Fixtures (2) 32w T8 lamps, 3-lamp ballasts
JVP Building	0	0	0	0	0	34

- Pre-retrofit energy use: 3,196 watts
- Post-Retrofit Energy Use: 2,210 watts
- Energy savings projection: 986 watts (.99 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 31 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$493	77 Gallons	$141
7 Hours	$863	135 Gallons	$247
10 Hours	$1,233	193 Gallons	$353

Notes: Traditional Council owned buildings had received T8 lighting upgrades prior the VEUEEM grants. The JVP building had 26, 3-lamp fixtures lighting a fairly small meeting

room TC maintenance staff dropped the lighting energy use in this building by 31% by removing one existing T8 lamp from each fixture.

Chemical Miss-Use Center

Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	4-Lamp Ballasts 25w lamps	20w CFL	25w CFL
Chem Miss-Use Center	2	0	0	0	0	1

- Pre-retrofit energy use: 264 watts
- Post-Retrofit Energy Use: 145 watts
- Energy savings projection: 119 watts (.12 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 45 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$60	9 Gallons	$17
7 Hours	$104	16 Gallons	$30
10 Hours	$149	23 Gallons	$43

Notes: Two fixtures in this building had been left out of previous lighting retrofits. TC maintenance staff upgraded those with T8s and electronic ballasts.

Chevak Village Corporation Owned Buildings

Energy efficient lighting upgrades were completed in three buildings owned by the Chevak Company Corp Store.

Village Corporation owned Buildings - Lighting Retrofit Summary:

- Lighting upgrades completed in February, 2006
- Retrofitted 136 linear fluorescent fixtures with T8 lamps and electronic ballasts
- Installed: 11 compact fluorescent light bulbs
- Pre-retrofit energy use for all lighting: 15,465 watts
- Post-retrofit energy use for all lighting: 8,530 watts
- Energy savings projection: 6,935 watts (6.94 kW)
- **Pre-retrofit to post retrofit energy reduction**: 45 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$3,468	543 Gallons	$994
7 Hours	$6,068	950 Gallons	$1,739
10 Hours	$8,669	1,358 Gallons	$2,485

Village Corporation Store

Materials Installed	2-Lamp Ballasts 32w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	4-Lamp Ballasts (4) 25w lamps	4-Lamp Ballasts (3) 25w lamps	13w CFL	20w CFL	25w CFL
Village Corp Store	16	7	2	21	0	0	1

- Pre-retrofit energy use: 6,500 watts
- Post-Retrofit Energy Use: 3,135 watts
- Energy savings projection: 3,365 watts (3.37 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 52 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$1,683	264 Gallons	$482
7 Hours	$2,944	461 Gallons	$844
10 Hours	$4,206	659 Gallons	$1,206

Notes: Shortly before VEUEEM grant lighting retrofits, the Chevak Village Corporation built an addition to their grocery store. They installed twice as many 2-lamp, T8 fixtures as was necessary. Store managers and clerks concurred there was much more light than necessary. Village Corp maintenance staff took every other fixture off-line to the satisfaction of store personnel and customers, and at a 50% lighting energy savings.

Hardware Store & Village Corporation Offices



Materials Installed	2-Lamp Ballasts 32w lamps	4-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	4-Lamp Ballasts (4) 25w lamps	13w CFL	20w CFL	25w CFL
Hardware Store & Corp Offices	17	2	20	17	8	0	1	2

- Pre-retrofit energy use: 6,195 watts
- Post-Retrofit Energy Use: 3,914 watts
- Energy savings projection: 2,281 watts (2.28 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 37 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$1,141	179 Gallons	$327
7 Hours	$1,996	313 Gallons	$572
10 Hours	$2,851	447 Gallons	$817

Notes: This building housed the hardware store on the lower level and the Chevak Company Corp Store offices and rental apartments on the 2nd floor. Throughout the building, 45 out of 64 fixtures were retrofitted with electronic ballasts and 25w lamps.
19 fixtures were retrofitted with 32w lamps, for a building-wide energy savings of 37%

PHS Bunk House

Materials Installed	2-Lamp Ballasts 32w lamps	2-Lamp Ballasts 25w lamps	2-Lamp Fixtures 3-lamp ballasts 25w lamps	4-Lamp Ballasts (4) 25w lamps	13w CFL	20w CFL	25w CFL
PHS Bunk House	1	15	9	1	1	2	4

- Pre-retrofit energy use: 2,770 watts
- Post-Retrofit Energy Use: 1,481 watts
- Energy savings projection: 1,289 watts (1.29 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 47 %

- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$645	101 Gallons	$185
7 Hours	$1,128	177 Gallons	$323
10 Hours	$1,611	252 Gallons	$462

Notes: This was an older building entirely lit by 40 watt T12s for their existing lighting. Since this building is basically housing for itinerant trades people working in Chevak, light levels suitable for offices or clinics are not necessary. Retrofitting nearly exclusively with 25w T8 lamps provided adequate light and great savings.

Kashunamuit School District Owned Buildings - Chevak School

Energy efficient lighting upgrades were completed in 21 teacher-housing units. During the summer recess of '07, per the Kashunamuit School District, the school gymnasium will receive T5 light fixture upgrades.

School owned Buildings - Lighting Retrofit Summary:

- Teacher housing lighting upgrades completed in December, 2005
- Retrofitted 21 linear fluorescent fixtures with T8 lamps and electronic ballasts
- Installed: 410 compact fluorescent light bulbs
- Pre-retrofit energy use for all lighting: 41,423 watts
- Post-retrofit energy use for all lighting: 13,829 watts
- Energy savings projection: 27,594 watts (27.59 kW)
- **Pre-retrofit to post retrofit energy reduction**: 67 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$13,797	2,161 Gallons	$3,954
7 Hours	$24,145	3,781 Gallons	$6,920
10 Hours	$34,493	5,402 Gallons	$9,886

Teacher Housing

All these replaced with CFLs means thousands of dollars in annual energy savings.

Materials Installed	2-Lamp Ballasts 32w lamps	13w CFL	20w CFL	25w CFL	3-way CFL, 12w -19w - 28w
Teacher Housing	21	347	21	0	42

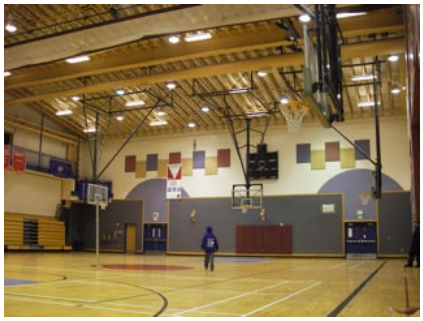
- Pre-retrofit energy use: 27,183 watts
- Post-Retrofit Energy Use: 6,989 watts
- Energy savings projection: 20,194 watts (20.19 Kw)
- **Pre-retrofit to post retrofit energy reduction**: 74 %
- **Estimated Annual Savings:**

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$10,097	1,581 Gallons	$2,894
7 Hours	$17,670	2,767 Gallons	$5,064
10 Hours	$25,243	3,953 Gallons	$7,235

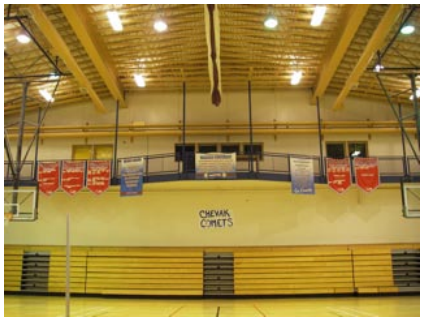
Notes: 21 teacher-housing units almost entirely lit by incandescent light bulbs at .50/kWh can only be described as bad. What is good is that all those were replaced with CFLs at enormous savings. If all housing lighting was used 4 hours / day for 250 days / year, changing these 410 light bulbs will save the Kashunamuit school district $10,000 / year. KSD provided all in-kind labor and $700 worth of CFL light bulbs for these retrofits.

High Output T5 Lighting Upgrades for the Chevak School Gym

Chevak Kashunamuit School



Existing 400-watt and linear fluorescent lighting



To be upgraded to T5 fluorescents during summer recess '07, per KSD

Hours Per Day / 250 Days Per Year	Electrical Savings	Avoided Diesel Use	Avoided Diesel Costs
4 Hours	$3,700	579 Gallons	$1,060
7 Hours	$6,475	1,014 Gallons	$1,856
10 Hours	$9,250	1,449 Gallons	$2,651

Notes: During the summer recess of '07, this retrofit will exchange 32, 415-watt multi-vapor fixtures and 24, 60-watt T8 fixtures, for 20, 6-lamp T5 fluorescent light fixtures at a 52% overall energy savings.

Chevak School, T5 Lighting Upgrade Details - ABSN Energy Efficiency Projects '05-'06

These retrofits will completed during Summer '07 Recess. Per kashunamuit School District.

	Length (feet)	Width (feet)	Ceiling Hieght (feet)	# of Existing Fixtures	Existing Fixture Wattage	**Total Existing Wattage**	Existing Foot-candles	New Foot Candles	# of New Fixtures	lamps / fixture	New Fixture Wattage	**Total New Wattage**
Chevak Gym	98	77	38	24	60	1,440	?	43	20	6	342	**6,840**
Existing lighting: 24, 60 watt T8 linear fluorescents and 32, 400 watt HID fixtures.				32	400	12,800						
			Total Exisitng Watts			**14,240**						
					Percent Savings Pre to Post Retrofit:							**51.97%**

Savings & Payback Calculation for Gym:

Assume 1750 hrs / year for 250 days/year of use

Full cost of electricity: $ 0.32 /kWh

Watts of existing lighting: 14,240

New wattage for T5 fixtures: 6,840

Calculation: (Watts) x (hrs/year) / (1000w/kw) x (cost of electricity) = (cost / year)

Existing Cost: $ 7,974

Retrofitted Cost: $ 3,830

Annual Savings: $ $ 4,144

Est material & shipping cost of Gym retrofit: $5,104.00

Simple Payback: Materials cost / annual savings = **1.23166** years (for retrofit to pay for itself in materials)

Six Programmable Thermostats were installed in Chevak Community Buildings

Maintenance staff installing and programming new thermostats

One programmable thermostat was installed in each location listed below:
City Office Building, Traditional Council Office Building, JVP Bingo Hall, Chevak Clinic, Corporation Grocery Store, Corporation Office Building

Chevak Company Corp Store – Old Hardware Store and Upstairs Offices

Chevak Company Corp Store – Old Hardware Store, Offices and Rental Apartments upstairs

Largely unused lower level – former location of only existing thermostat

New location of programmable thermostat

Notes: The Chevak Company Corp Store Office building has good potential for significant fuel savings resulting from the programmable thermostat installed. There was one existing thermostat for the entire building controlling the forced air furnace from the first floor old hardware store area. Late in 2006, this area was shut down for retail sales. This area was still used occasionally for laundry and the adjoining snow machine shop and warm storage was still used. However, the entire lower level did not have to be kept at more than 50 – 55 degrees. The areas of the building that needed heat were all upstairs in offices and rental apartments. In order for those spaces to be at 65 – 70 degrees, the old thermostat located in the unused space was set at a permanent 70 degrees. All the forced air heat vents in the downstairs area were closed to facilitate heat getting upstairs. But this meant the downstairs could never get to 70 degrees and so heat was constantly called for and the furnace ran nearly perpetually. In the afternoons on sunny days when solar gain helped heat upstairs offices, the furnace would still be running – trying to reach 70 degrees downstairs – resulting in overheating the upstairs and burning unnecessary fuel. Village Corp maintenance staff ran new thermostat wire and installed a programmable thermostat upstairs in the apartments, so heat could be controlled where heat was needed.

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

Village entities worked with: Tribe, City, Village Corp, School District.

In-Kind Item	Dates	Hours Contri-buted	Hourly Wage	Value / Amount	Notes
Staff time for project contact, introduction, and reviewof intro materials (Number of entities x 1 hour each)		4	$15.00	$60.00	Hrs contributed column indicates # of entities we worked with in the village. $15 / hr is our estimated average wage for local village staff: Tribal Administrators, City Clerks, Facilities Managers, maintenance staff, etc.
Staff time for Attending teleconference all entities village-wide		12	$15.00	$180.00	Hrs contributed column indicates length of telecon multiplied by # of village telecon participants
Maint. Staff all entities - research and record lighting counts and PCB info. City/TC - 6 hrs, School - 4 hours, Vilage Corp - 5 hours		15	$13.00	$195.00	After we discovered USKH counts were quite spotty in the West region we asked some villages to re-do counts and check for PCBs
CityMaint. Staff time - Document measurements and gather waste lamps - 2nd site visit	2/21 - 23/06	18	$13.00	$234.00	Pete Slats (9.5 hours), Cookie (0.5 hours), Paul Teve (5 hours), Nick Levy(3.5 hours)
Maint. Staff time to attend ABSN training		24	$13.00	$312.00	Hrs contributed column indicates length of training multiplied by # of in-kind training participants
Village office administrative percentage of total project cost less ABSN Admin %. Total project cost = $37,250/village - (our admin percentage , (around 9%) Approx: $3,352) = $33,897 x 5% = $1,694 (this 5% 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 primarily for cumulative, otherwise unaccounted time expense for project support.	Jan '05 - Jan '07			$1,694.00	Each time we call, email, or fax a village entity, someone has to receive the communication, review and/or foward the information, follow-up on requests, etc. Wether 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, request a labor reimbursement agreement, or invoice etc, etc. Village expenses for phone charges, copying and fax costs, office supplies, etc are part of this ammount.
Lodging for ABSN Field Managers - all site visits		8	$20.00	$160.00	8 nights - school rate of $20/day
Transportation and fuel costs - all site visits		5	40	$200.00	5 days @ $40/day
School & teacher housing lighting upgrades		50	16	$800.00	to change 410 incandescent bulbs to CFLs and retrofit 21 linear fluorescent fixtures in 21 teacher housing units.
School T5 Gym lighting upgrades				$5,000.00	Est: $5,000 big gym with high ceilings) In-kind labor, both local and regional provided by school district
Employer expense for Workman's Comp		3,157	0.05	$157.85	Generic multiplier: .05 x gross payroll of village labor (indicated in hrs contrib collumn)
KSD Materials - lamps		230	$3.70	$851.00	230 13w CFLs
Everts Air Cargo, 5 boxes of lamps and 1 bucket of ballasts -	2/25/06			$73.83	No charge back haul, Chevak - Anch, 255# x $.25/lb + $4.34 Fed Excise tax + fuel sur charge of 5.74= $73.83 LZ: "2 boxes were completely broken and the others 40% were broke."
ATS, 1 drum PCB ballasts	2/25/06	120	$0.69	$82.80	No charge back haul, Chevak - Bethel, 120# x $.69/lb ($.69 / lb with no sur charges is ATS back haul rate froom the villages)
ATS, 11 buckets of non-PCB ballasts	2/25/06	760	$0.69	$524.40	No charge back haul, Chevak - Bethel, 760# x $.69/lb ($.69 / lb with no sur charges is ATS back haul rate froom the villages)
NAC, 1 drum PCB ballasts	3/23/06			$38.23	No charge back haul, Bethel - Anch, 120# x $.27/lb ($32.4) + 6.25 % ($1.94), Fed Excise tax + fuel sur charge of 12% ($3.88) = $73.83 LZ: "2 boxes were completely broken and the others 40% were broke."
NAC, 11 buckets of non-PCB ballasts	3/23/06			$242.64	No charge back haul, Bethel - Anch, 760# x $.27/lb ($205.20) + 6.25 % ($12.82), Fed Excise tax + fuel sur charge of 12% ($24.62) = $73.83 LZ: "2 boxes were completely broken and the others 40% were broke."
	TOTAL			$10,805.75	