

Akiachak Energy Efficiency Project



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**DOE PROGRAM REVIEW
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Akiachak Native Community



- Yup'ik Alaska Native Village of 701 people
- In 1890, the population was 43 people.
- Fishing and subsistence lifestyle
- First community in Alaska to dissolve city for Tribal Government, on January 31, 1990
- High costs: \$0.60 / kWh, \$5.60 per gallon of fuel oil



Background



- Akiachak developed energy efficiency and conservation strategy
- Current energy cost burdens
 - Tribal government in debt to electric company
 - Buildings not used because of energy costs (old washeteria)
 - Comfort issues for staff
- Previous efficiency work:
 - Village Energy Efficiency Program
 - ✦ Audited 11 buildings in 2010
 - ✦ Provided \$150k of upgrades with an estimated annual payback of \$44k



Energy Efficiency and Conservation Strategy



1. Create and maintain functionally appropriate, sustainable, accessible, high quality Tribal infrastructure and facilities.
2. Protect and optimize the Tribe's natural resources and built environment, leading by example through sustainable practices and behaviors.
3. Decrease overall community consumption of non-renewable and non-recycled materials.
4. Promote, implement, and integrate sustainable practices throughout the community in our homes, businesses, and everyday lives.

Project overview



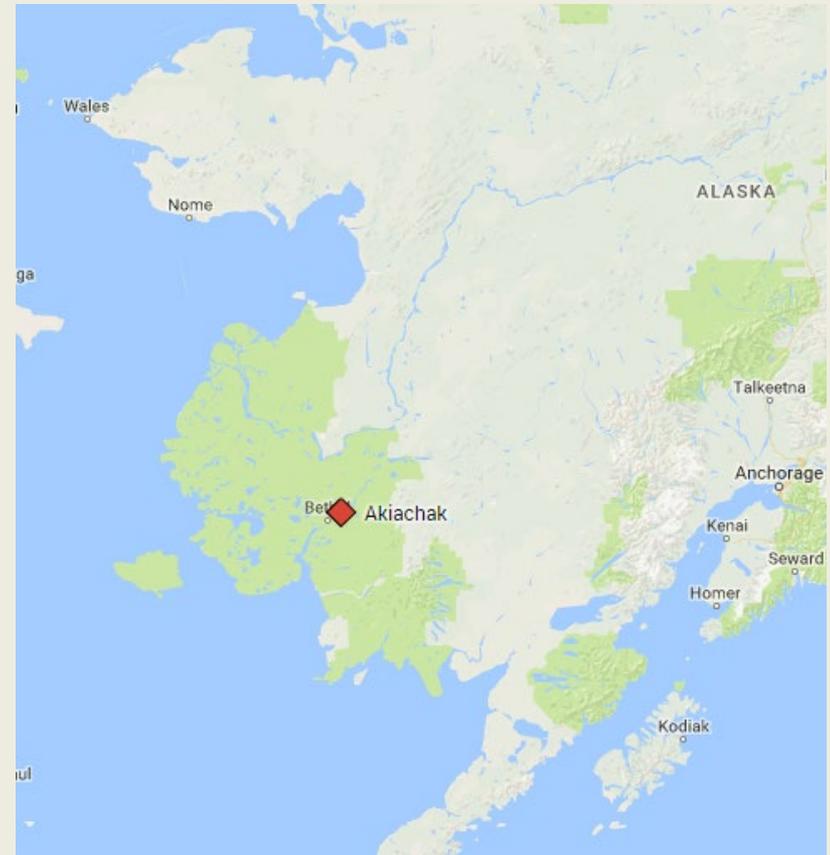
- Problem: High cost of energy burdens tribal government, diverts funding from providing services
- Goal: Reduce energy use in existing tribal facilities
- Strategy:
 - Identify high energy users
 - Conduct ASHRAE Level II energy audits
 - Develop Energy Action Plan



Project location



- Located on the Kuskokwim River in Southwest Alaska
 - Barges deliver fuel and supplies in the summer.
 - Mail often delivered via hovercraft.
 - River serves as an ice road in the winter.
- Not connected to road system.
 - Lack of funding to build roads.
 - Topography limits ability to build roads.
 - Travel is by four-wheeler in the summer and snow machine in winter.



Participants



Project objectives



- To reduce and stabilize energy costs in tribal buildings by setting energy efficiency improvement goals.
- These efficiency goals will provide direction for future retrofit projects.
- Demonstrate sustainable practices and behaviors to the entire community.

Project buildings



- The Akiachak I.R.A. Council chose 9 buildings to participate in the project:
 - Bingo hall
 - Clinic
 - Daycare building
 - Laundry
 - Old jail
 - Police station
 - TANF office
 - Tribal I.R.A. office
 - Youth & Elder building



Accomplishments



- The Akiachak I.R.A. Council decided on goals for each building in the project.
 - Reduce energy use
 - Improve comfort issues in the police station, daycare building, and TANF building
 - Renovate the Youth & Elder building for increased use
- The project team collected baseline data for each building.
 - Data monitoring plan
 - Energy use and building condition



Accomplishments



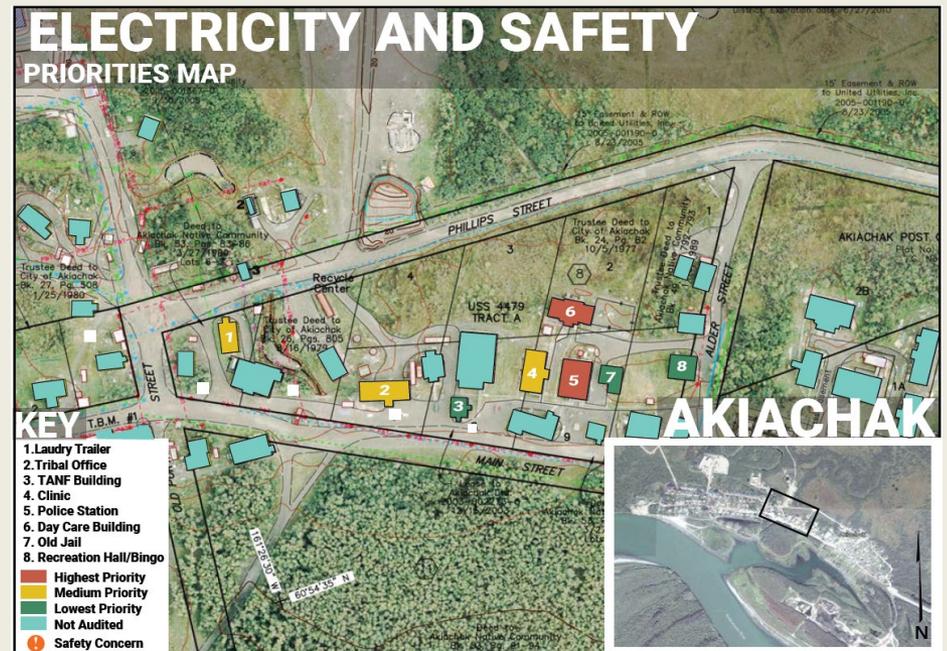
- The project team completed energy audits for each building.
 - Recommendations to reduce energy use
- The project team trained the maintenance manager on boiler repair and lighting retrofit techniques
- The project team presented final audit results and draft report to the Council and walked through the buildings with the maintenance manager to show him and office staff each recommendation.



Final activities



- The project team will complete an Energy Action Plan for the tribal buildings.
 - Project information
 - Building descriptions and baseline data
 - Data monitoring plan
 - Energy audit summaries
 - Maintenance plan
 - Funding opportunities
 - Scope of work for contractors
- The project team will showcase the project to the community via a flyer and video, as they look toward next steps.



Future plans



- Akiachak will use the Energy Action Plan as a resource and look for funding to improve the tribal buildings.
- The maintenance director is already starting to implement energy conservation, such as maintaining boilers and programming thermostats.
- Other projects:
 - Ongoing water and sewer project to connect east side of village to piped system to allow them to stop the use of honey buckets
 - Road to Gweek River to provide access to land for housing
 - Trail to access fishing and subsistence areas
 - Improve current streets
 - Provide winter trail markings to increase safety of winter travel

Lessons learned



- The project made us more aware of the energy that we used in our buildings, and showed us that there are other options out there for what we can do to reduce our energy costs.
- VIPER is not a very user-friendly website!



Questions



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