



Energy Use and Conservation

In this era of chaotic and rapidly changing energy costs, global warming and diminishing supplies of fossil fuels, Grant-Kohrs Ranch National Historic Site has started to look for ways to cut down our energy usage and lower our costs. As illustrated by the chart below, energy costs as a percentage of the park's annual budget jumped significantly from FY07 to FY08. Substantial thought and effort by the management staff are being targeted toward ways to run our operations on a more energy efficient basis. We are also working in partnership with our local energy utility to find effective ways to lower usage and costs while maintaining compliance with the Secretary of the Interior's standards of historic preservation.

	Total Utilities Costs (Use of structures + city fees+ vehicle gas use)	Enacted park budget	% of budget
2003	\$17,360 + \$2,321 + \$2,800= \$22,481	\$1,032,300	2%
2004	\$23,410 + \$2,321 + \$3,470= \$29,201	\$1,025,800	2.8%
2005	\$23,790 + \$2,401 + \$4,890= \$31,081	\$1,224,000	2.5%
2006	\$27,710 + \$2,401 + \$7,510= \$37,621	\$1,248,000	3%
2007	\$26,380 + \$2,401 + \$8,178= \$36,959	\$1,258,000	2.9%
2008	\$33,995 + \$2,833 + \$9,525= \$46,353	\$1,312,000	3.5%

On May 15, 2008, Grant-Kohrs Ranch National Historic Site had an energy audit completed by NorthWestern Energy, region-wide supplier of electricity and natural gas. The purpose of the audit was to determine what we as a park could do to decrease our level of energy use within the bounds of our mission to remain true to the historic integrity of our structural resources.

Energy-Saving measures already installed:

The following actions have been implemented in the Warren House (park headquarters) as a result of the energy audit: 10 feet of pipe insulation have been placed over water lines, a tank wrap has been placed around the water heater, and 13 compact fluorescent lamps have been installed in place of incandescent lamps. Heat supplied by natural gas is cheaper than electric heat; therefore, the small electric space heaters that were commonly used in personal office space have been removed.

Energy-Saving measures planned:

As a result of the energy audit, 25 incandescent lamps in our Visitor Center (shared with the U.S. Forest Service) will be replaced with compact fluorescent lamps. This will result in an annual savings of \$423 and a decrease in annual energy consumption of 4042 kWh (kilowatt hours).

Energy-Saving recommendations not to be implemented:

Ranch House:

1. Replace incandescent lamps with compact fluorescent lamps.
Reason – many lamps are exposed; change would cause negative visual impact to the historic interior.
2. Lower HVAC setpoint temperature.
Reason – temperature and humidity levels need to be maintained for optimum care of museum artifacts on display in the house.
3. Install insulation under roof.
Reason – introduction of non-historic material does not result in substantial savings.

Maintenance Shop:

1. Install T-8 lamps and electronic ballasts.
Reason – Very minimal savings; 5 year cost recovery.

No Recommendations:

The museum storage facility and the blacksmith/visitor bathroom building were also audited. Both buildings were found to be operating efficiently in the use of energy covered by this audit.

Other efforts by the park to reduce energy costs and usage not included in the energy audit:

1. In FY08, the park purchased an all electric utility vehicle manufactured by E-ride Industries. This vehicle replaced a combustion driven Toolcat, manufactured by Bobcat.
2. The maintenance shop burns old fencing material in a large wood furnace to reduce the need for natural gas heat in the building.
3. The park purchased a 2009 Ford Escape hybrid vehicle and we expect delivery in February 2009. This will replace a 1989 Chevrolet Blazer resulting in much greater fuel efficiency.
4. The visitor center also burns recycled fencing material as its primary heat source. There is a back-up propane system as well.
5. 2 independent studies, one done in 2005 by the Business Plan Initiative consisting of 2 MBA's from Washington, DC and the other completed by the park's facility manager in 2008, determined that wind energy was not cost effective due to high structural costs and lack of sustained winds.
6. The facility manager is presently researching the use of solar energy in the development zone.
7. Fleet inventory now stands at 37 vehicles. As replacement funds allow, we will purchase more energy efficient vehicles to replace older, less efficient inventory.

* Additional and more specific energy analysis for the last 7 years is available upon request.

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