



Fairbanks Resource Agency (FRA)

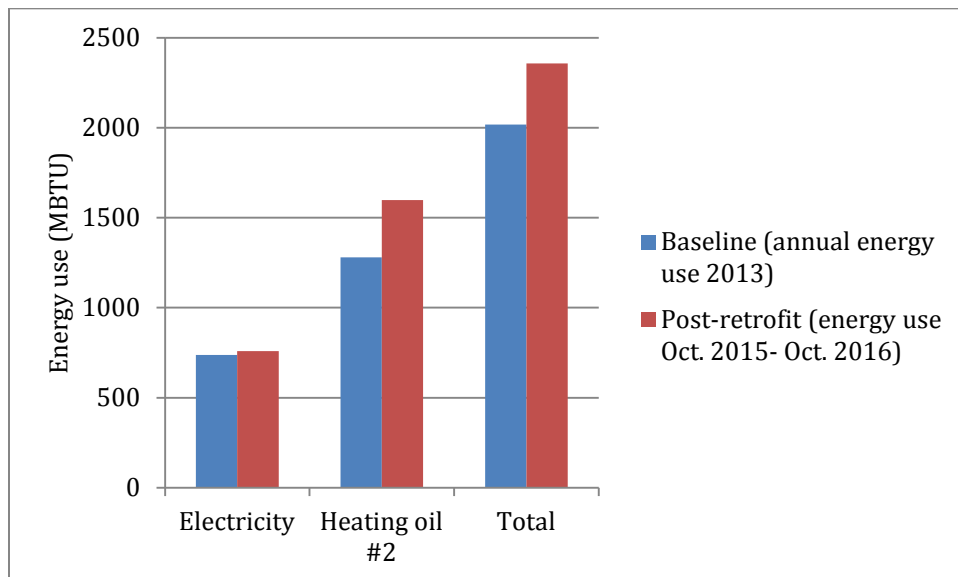


Auditor: Nortech

Audit date: September 2014

Nonprofit retrofit summary

FRA replaced their oil-fired boilers with new energy efficient models, re-piped their mechanical room, and put timers on circulation pumps. They also incorporated lighting upgrades into their annual building maintenance procedures and replaced their refrigerator with an energy efficient model. They did not see a decrease in energy use from the baseline year. The building use, occupancy, and comfort level did not change during the project, but building staff theorized that the baseline year fuel use was lower than a typical year because one of their boilers did not work and thus did not run for much of 2013.





Retrofit costs

Level I audit cost: \$1,500

Level II audit cost: \$6,275

Predicted retrofit cost: \$67,066

Actual retrofit cost: \$91,000

Notes: The predicted retrofit cost for the boiler replacements referred to the additional cost of upgrading a planned boiler replacement with an energy efficient boiler. The actual retrofit cost reflects the full purchase price of the boiler and a redesign and installation of the piping system in the mechanical room.

Energy savings

Annual Consumption	Baseline	Post-retrofit	Notes
Monetary	\$74,425	\$65,549	Baseline energy use is the annual energy use from 2013. Post-retrofit energy use is from October 2015 to October 2016.
Electricity	21,6232 kWh (738 MBTU)	22,2240 kWh (759 MBTU)	
Heating Oil #2	9,268 gallons (1,279 MBTU)	12,738 gallons (1,758 MBTU)	
Total Energy	2,017 MBTU	2,516 MBTU	
Annual Savings	Modeled	Post-retrofit	Notes
Monetary	\$10,367	\$8,876	FRA saw energy cost savings in spite of an increase in fuel use because of a decrease in fuel prices during the study. FRA staff theorized that the increase in use occurred because one of their boilers broke during 2013 and was offline for a portion of that year.
Electricity	13,281 kWh (45 MBTU)	-6008 kWh (-21 MBTU)	
Heating Oil #2	611 gallons (84 MBTU)	-3470 gallons (-479 MBTU)	
Total Energy	129 MBTU	-500 MBTU	

Non-energy changes

Building occupancy: No change.

Building use: No change.

Occupant comfort: No change.

Nonprofit services: No change.