

Residential Energy Retrofit Program Final Report

The Energy Retrofit Program was developed by the City of Flagstaff Sustainability Program to help residents save money on utility costs through improved home efficiency. The Program was funded through the American Recovery and Reinvestment Act (ARRA) and the Living Cities Foundation.

The City received \$757,100 in total grant funds, 87% of which were directly infused into the Flagstaff community. The Program was created in response to the need for affordable and improved home energy efficiency measures in the Flagstaff community.

Due to the global and regional economic environment in 2009 through the present, many Flagstaff residents lacked fiscal resources that would encourage investment in home energy improvements. The Program offered a means for Flagstaff residents to invest in the affordability, efficiency and comfort of their homes.

What is an Energy Retrofit?

The Program was designed to serve all income levels throughout the residential sector. Program participants contributed to a portion of the retrofit's cost based on their household's annual income. The contribution was assessed on a sliding scale and was leveraged to increase residential energy efficiency services. Flagstaff residents received a home energy assessment performed by a certified building science professional. Once the energy assessment was complete, the resident received an energy retrofit.

Energy Assessment

- Energy and home performance testing
- Gas leak testing
- Combustion safety testing
- Furnace inspection

Energy Retrofit

- Weather stripping and caulking
- Outlet gaskets
- Low flow water fixtures
- CFL lighting
- Furnace filters
- Insulation of water heater and plumbing
- CO detectors
- Duct and air return sealing

Education

- Explanation of work performed
- Additional energy saving tips
- Recommended next steps for additional energy savings

“Outstanding, awesome, friendly, helpful, informative! A great experience overall-worth every penny for discovering health/safety issues AND improving my energy efficiency.”

– Retrofit Recipient

Recovery Dollars at Work in Flagstaff

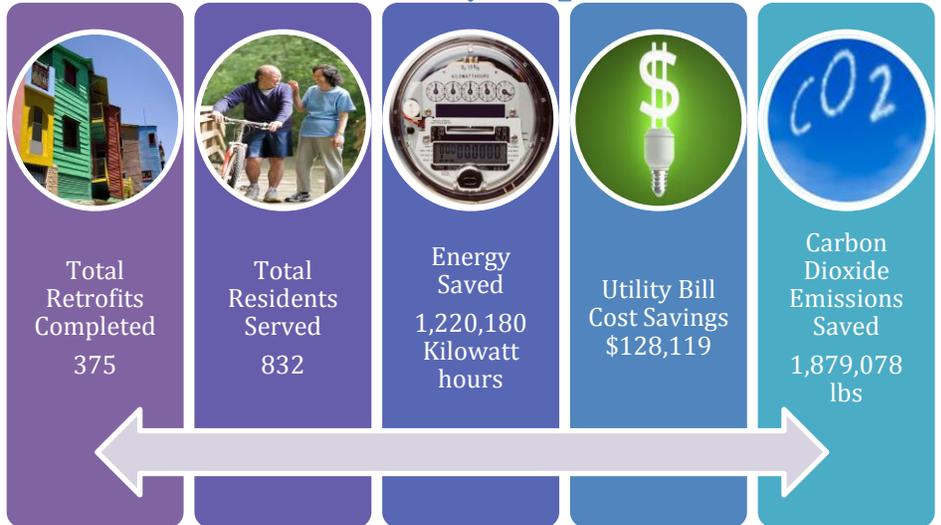
Community Impact

Estimated savings were calculated by a building science professional based on the baseline energy use of a participating household.

It is estimated that for the 375 completed retrofits, participants will annually save over one million kilowatt hours of energy. This results in over \$100,000 in utility cost savings for all residents. Estimated savings calculations took into account the retrofit measures performed and the existing condition and energy performance of the residence.

The City measured program effectiveness with estimated savings as well as actual savings to account for utility rate increases, individual behavior and weather. The realized savings will be better represented once all program participants experience at least 12 months of post retrofit energy savings.

Estimated Community Impacts

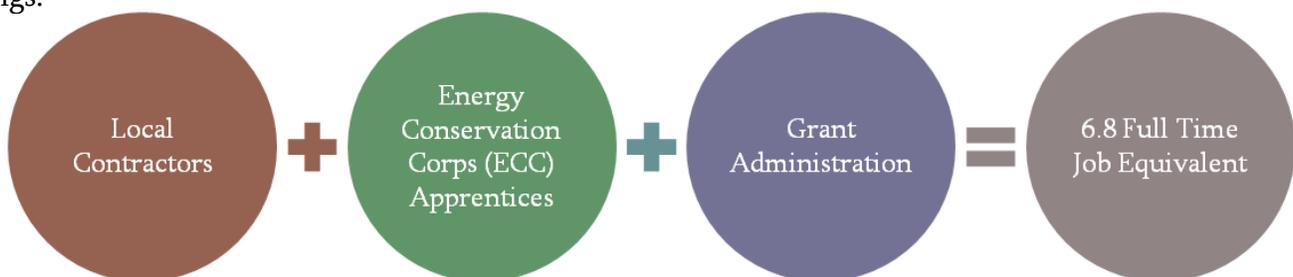


Community Partnerships

Community partnerships were the foundation for the success of the Retrofit Program. Staff collaborated with the Northern Arizona Regional Network for Energy and Water Sustainability (ReNEWS). ReNEWS conducted joint outreach opportunities and helped increase Program participation in community events through collaboration and program support.

Job Creation

Over the course of the grant, total expenditures to local contractors and service providers were \$679,501. The City partnered with Coconino Rural Environmental Corps (CREC) to develop a unique workforce development model in which corps members were placed in the building performance construction sector. In sum, the retrofit program is responsible for creating and maintaining the equivalent of 6.8 full time jobs in the Flagstaff community. Jobs created ranged from apprenticeships to grant administration to contractors.



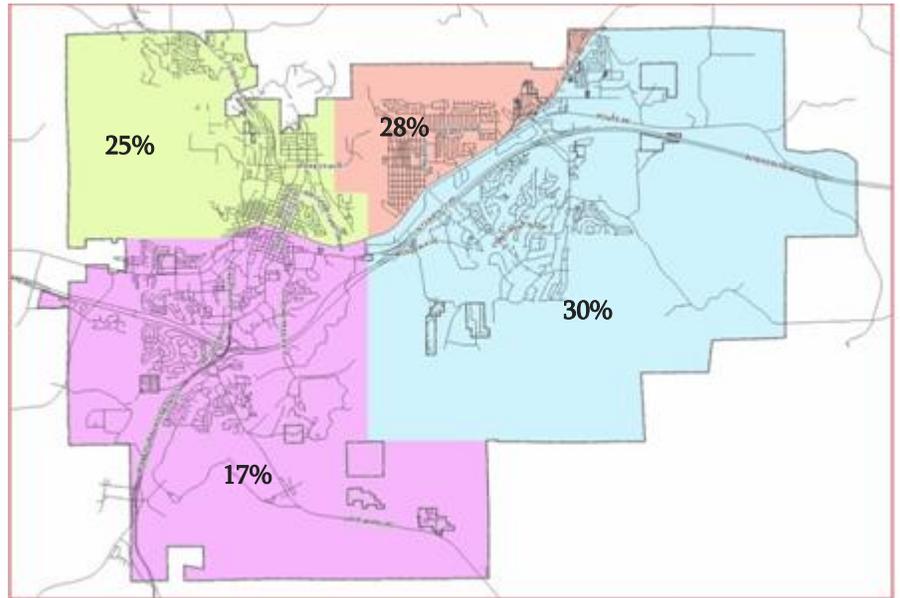
Recovery Dollars at Work in Flagstaff

Demographics

Participation was tracked by geographic location, annual income, and household size to ensure community-wide participation. The average household size was 2.5 people. As shown in the map to the right, the majority of participants lived in the southeast section (bulky trash section 3) while the southwest section (bulky trash section 4) had the lowest participation.

Annual household incomes ranged between \$7,000 and \$260,000, making it one of the most inclusive retrofit programs available in northern Arizona. The average household income was \$47,000. Although the Program was open to renters, 90% of participants owned their homes.

Program Participation by City Section



“Great work – a good sign of local government doing something positive for local residents.”
-Retrofit Recipient

Program Fee Schedule

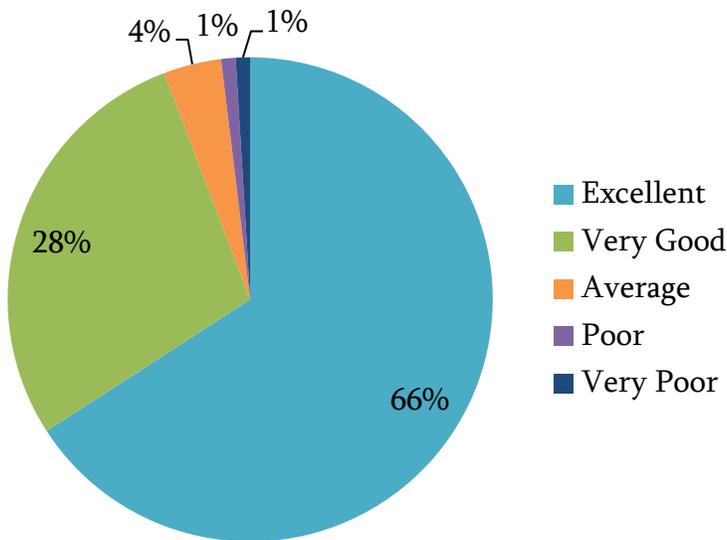
The Program was designed to serve all income levels throughout the residential sector. Program participants contributed to a portion of the retrofit project’s costs based on their household’s annual income. The contribution was assessed on a sliding scale and was leveraged to increase residential energy efficiency services. Grant income generated through the program fee schedule supports ongoing energy efficiency programming in Flagstaff.

Energy Retrofit	Household Income	Resident Co-Pay	Grant Match	Cost Savings off Valued Price	Participation by Income Bracket
Value of services provided: \$1,250	\$0.00-49,999	\$25	\$1,225	98%	66%
	\$50,000-64,999	\$125	\$1,125	90%	19%
	\$65,000-79,999	\$375	\$875	70%	6%
	\$80,000 +	\$625	\$625	50%	9%

Quality Assurance

To guarantee standardized and quality retrofits, the City hired an independent, third party to perform quality assurance testing on 10% of the retrofit projects. In addition, customer service surveys were distributed to past retrofit participants. A total of 223 surveys were returned rating the overall program experience. 94% of participants rated their program experience as “excellent” or “very good.”

Energy Retrofit Program Experience



Health and Safety

Grant funding was available for participants that required additional health and safety work, regardless of income level. Work included fixing gas leaks and installing exhaust fans to improve indoor air quality. In sum, 72 homes received the additional work as part of their energy retrofit.

City of Flagstaff Sustainability Program

www.flagstaff.az.gov/homes



Flagstaff's ARRA Legacy

The Flagstaff community will continue to enjoy the benefits of American Recovery and Reinvestment Act (ARRA) and Living Cities funding for years to come. As the City continues to prioritize residential energy efficiency services, Flagstaff community members will be safer and more comfortable in their homes while saving financial and energy resources.

With a commitment to continue improving residential energy efficiency in the Flagstaff community, the City developed an energy upgrade rebate program in partnership with UniSource Energy Services. The rebate program offers additional incentives to Flagstaff residents looking to replace natural gas water heaters and furnaces, and to install attic insulation.

ARRA funding provided the opportunity for the City of Flagstaff to prioritize residential energy efficiency which has and will continue to improve the quality of life for Flagstaff residents.

Program participants are able to use their ongoing savings on other expenses, which further infuses money into the local economy.