UF IFAS Extension UNIVERSITY of FLORIDA

UF/IFAS PEER REVIEWED AEC705
doi.org/10.32473/EDIS-wc368-2020

Developing Extension Programming to Help Low-Income Families Save Money and Energy: The Community Weatherization Coalition Model[1]

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Introduction

This publication is the first in a series that will help Extension agents, nonprofits, agency personnel, and other promoters of community development better understand both the issue of high utility bills among low-income residents and what they can do to help. This first publication provides an overview of one program approach taken by a group of volunteers in Alachua County, the Community Weatherization Coalition, which uses a model of trained "energy coaches." This program has trained hundreds of volunteers in household energy conservation, conducted more than 2,000 "home energy tune-ups," and saved participating households an average of 10% on their utility bills (Chau et al. 2023; Schmink et al. 2018). The program has collaborated with Extension specialists for evaluation, strategic planning, and expansion into other counties. This program can be easily adapted to Extension programming aimed at community development, household financial savings, and energy and sustainability efforts. The other publications in the series include information on calculating energy savings for participating households and evaluating impact on clients and volunteers, as well as a step-by-step guide to creating and implementing an energy savings program in your community.

Background

High utility bills can constitute the largest monthly expense for some homeowners and renters and can undermine the ability of individuals and communities to maintain their homes. A 2018 study by the University of Florida and Bureau of Economic Business Research (BEBR) documented that while the average Alachua County household spent 5.5% of income on home energy costs, low-income families spent an average of 22% of their annual income on energy expenditures, primarily because their homes were older and less efficient.

The Community Weatherization Coalition (CWC) is a partnership of organizations and individuals in Alachua County that joined together in 2008 to address the problem of low-income residents who had difficulty paying their utility bills. Members from the faith community, the University of Florida (UF), the publicly owned regional utility (Gainesville Regional Utilities, or GRU), local government, and the nonprofit community worked together to develop and implement a volunteer-based model of training and deployment of energy "coaches" to carry out comprehensive home energy surveys or "tune-ups." Eighteen years later, CWC energy coaches have carried out over 2,000 home energy/water surveys, and they have saved residents hundreds of thousands of dollars in local utility bills, over tens of millions of gallons of water, and over four million kilowatt-hours of electricity. In addition to saving energy and water resources, this program helps people overcome economic barriers by reducing their bills, thereby freeing scarce income for other uses.

What Do CWC Volunteers Do?

The CWC's mission is to help their neighbors save energy and water, and thus reduce their utility bills, by engaging volunteers, building community, and learning together. One of the more unique aspects of the CWC energy tune-up program is their strategy of meeting residents where they live. Their volunteers aim to clarify and simplify utility consumption issues, to educate residents about their homes' functions and systems, and to connect clients to resources available to them. They not only highlight the importance of behavioral changes and education but also demonstrate the potential impact of small investments in home infrastructure.

CWC home energy/water coaches spend 2–4 hours in each home, working closely with residents to inspect the building envelope, major appliances, lighting, water consumption, and safety issues. They review the client's concerns about energy and water use, discuss their utility

expense history and how energy use and behavior affect the charges on their utility bills. They install energy- and water-saving materials as well as safety measures, including efficient lightbulbs, showerheads and aerators, pipe insulation, switch/outlet gaskets, and carbon monoxide detectors (for those with gas appliances), and take other actions such as cleaning refrigerator coils and AC filters. They share dozens of tips for how to reduce utility expenses, improve safety, and increase comfort, and they provide both a detailed report and recommendations for how residents can reduce energy/water use in their homes. The CWC also partners with other agencies that can assist with critical home repair, upgrading appliances, and carry out next-level retrofits or energy upgrades (caulking, weather-stripping, minor repairs, added insulation, etc.).

What Is the Impact of CWC Services?

One key element of the CWC model is creating partnerships with Extension, nonprofits, communities, agencies, utilities, and local government. Through a partnership with the University of Florida's Program for Resource Efficient Communities (PREC), the CWC was able to measure the annual savings in energy/water usage and in dollars saved on utility bills following their home water/energy use surveys from 2010–2016. During the 12 months after their CWC tune-ups were performed, the mean savings were about 1,700 ekWh (equivalent kilowatt hours, including both electric and gas usage) per year—about a 10.6% reduction in energy use—as well as over 6,000 gallons of water conserved, leading to average savings of $255 per year per home. These savings persisted and even increased 5–6 years after the tune-up because of the emphasis of the program on education and empowerment of residents.

Another partnership opportunity for the CWC has been with specific communities in underserved areas of Gainesville. Because African American and Hispanic communities reside in low-value, older homes that have low energy efficiency, the energy burden on these families (the proportion of income spent on utilities) is higher. To address these energy inequalities, the CWC developed a strong partnership with the Greater Duval Neighborhood Association (GDNA), representing a large, historically African American neighborhood in east Gainesville. The CWC has carried out home energy tune-ups in the Greater Duval neighborhood that resulted in an average annual savings of $313 per home. These tune-ups resulted in a collective savings of $30,000 per year in this neighborhood alone. The CWC has also established strong partnerships with funders, such as the local public utility, city government, and county government, and has successfully secured grants and donations that support four paid staff persons to coordinate volunteer and client recruitment, biannual volunteer training programs, and the logistics of deploying pairs of volunteers to the homes of families needing their services. The program has already inspired the creation of a similar program in Sarasota County, and the CWC is working in partnership with UF/IFAS Extension to help expand similar programs to other counties in Florida. Since 2024 CWC also has collaborated with representatives of GDNA and three other energy-burdened local communities through the EMPOWER Coalition (https://empoweralachua.com). EMPOWER is working to increase weatherization repairs supported by a Community Investment Fund governed by a Community Improvement Board made up of residents of three neighborhoods who have developed procedures and guidelines for decision making about home repair investments.

Elements of the CWC Community Service Model

- Volunteer-based, home energy/water education and behavior change program
- A home energy tune-up conducted by at least two volunteers, who spend 2–4 hours in the homes of clients, engaging, observing, and demonstrating energy savings
- No eligibility criteria for clients; CWC provides home energy services for low-income as well as middle-income residents and renters, who are not covered by most other programs
- Emphasis on all partners learning from one another and seeking behavior change
- Impact measured by follow-up surveys and monitoring energy use data from local utility
- Built on partnerships: housing agencies/nonprofits; public utility; city and county governments; universities, Extension
- Diverse funding sources, including the city and county governments, local utility, foundation grants, individual donors, and local business sponsorships
- Biannual volunteer training: over 12 hours of classroom and hands-on instruction
- Representative volunteer advisory board
- 3–4 (paid) staff to coordinate intake, schedule visits, secure materials, conduct client follow-up, perform outreach and recruitment of clients and volunteers, and coordinate biannual trainings

Conclusions: Saving Money and Natural Resources, Together

Extension educators and other community development efforts can benefit from programs that train volunteers to conduct in-home energy audits, following the CWC model. The ability to empower families to adopt simple strategies to reduce their energy and water bills, and thus boost their quality of life, is made possible through the CWC's success in motivating volunteers, teaching and learning together to foster a sense of community and establishing local

partnerships. These are also strengths of the Florida Cooperative Extension Service. Not only are the economic impacts significant to these participating households, but also to energy and water conservation goals at the county and state level. Future Ask IFAS publications in this series will demonstrate how to measure the actual energy and water savings from these programs, how to evaluate the impact on clients and volunteers, and how to establish a similar program in your community.

References

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[1] This document is AEC705, one of a series of the Department of Agricultural Education and Communication, UF/IFAS Extension. Original publication December 2020. Revised June 2026. Visit the Ask IFAS website at https://ask.ifas.ufl.edu/ for the currently supported version of this publication.

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