

# **Efficient Use of Energy Efficiency Programs Improves Resident Service and Education**

*Author: David Byrne, City of Tallahassee Utilities, Tallahassee, Fla.*

*Co-Author: Michael Ohlsen, City of Tallahassee Utilities, Tallahassee, Fla.*

*Co-Author: Mike Kimmelman, Honeywell, Tallahassee, Fla.*

## **ABSTRACT**

Residential energy efficiency programs traditionally focus on direct installation of energy measures as a cost-effective means of motivating consumer investments in household upgrades designed to promote sustainability. But a major challenge facing utilities and administrators is uncovering sustainable solutions to drive greater adoption of these measures. The reality is that many residents are unaware of city programs, services and initiatives aimed at reducing overall energy consumption, and have not been proactively approached or educated on how their energy behaviors impact the community at large. The result is less participation, greater community energy consumption and larger costs for families and utilities.

The City of Tallahassee found success in reaching greater numbers of citizens by combining its traditional energy efficiency program with a proactive, neighborhood-centric approach to form the Neighborhood REACH program. This leverages measures from the City's traditional energy efficiency program, employs a door-to-door neighborhood canvassing approach, and incorporates other City energy services and initiatives to maximize resident outreach, awareness, and participation. The result is reaching citizens who would ordinarily be absent from energy efficiency program participation and transforming them into knowledgeable community advocates.

This paper will explore the implementation and reception of a combined energy efficiency and outreach program like Neighborhood REACH. It will address the benefits and challenges of the approach and how the resident base has responded. Further, it will look at key learnings from the program and discuss the internal and external barriers to the approach and how they can be addressed.

## **Introduction**

The City of Tallahassee is a medium-sized city in northwestern Florida with a population of approximately 183,000. The City's municipal utility serves 87,000 residential and 9,700 commercial customers with electric, gas, and water services.

For more than 20 years, the City offered rebates, grants and free home energy audits to its qualified residents to help make energy-efficient improvements to their homes and realize associated permanent reductions in their utility bills. These programs, however, relied largely on the resident to approach the City for assistance, and even with multiple outreach and marketing efforts, many eligible customers did not take advantage of the services or were unaware that they existed.

To overcome this problem and drive greater awareness and participation, the City launched the Neighborhood REACH program – a collaborative effort bringing together a variety of city services initially focused on improving livability within Tallahassee's traditionally low-

income neighborhoods. By engaging its customers face to face using a more proactive, community-centered approach, the City created a sense of excitement in these neighborhoods by portraying the potential for improved quality of life through energy efficiency and savings. REACH involves cross-coordination with other city services and programs across a variety of departments to highlight services that benefit the entire neighborhood – services like road and sidewalk improvements and other neighborhood beautification measures. In short, Neighborhood REACH seeks to leverage the utility’s demand-side management energy-savings program with a larger suite of city services to provide an improved platform for customer engagement and participation.

### **How Neighborhood REACH Works**

At the core of the REACH program is a team of energy professionals working door-to-door to provide participating residential customers with free home energy assessments, energy- and water-saving measures and related educational materials. While in the home, the REACH team performs several free energy-related services such as weather-stripping exterior doors, caulking windows, replacing HVAC filters, cleaning refrigerator coils, or replacing light bulbs with CFLs.

In addition to modernizing the home, this provides a key opportunity for the team to offer hands-on learning opportunities and showcase other city services and programs. For instance, an energy auditor walks through the home with the customer and highlights simple changes that will help further reduce home energy and water consumption while, nearby, other city crews repair sidewalks and broken street lights, clean drainage ditches and overgrown vacant lots, repaint faded crosswalk signs, repair street shoulders, replace faded street signs, and repair broken sewer caps. Customers get the benefit of improving home energy efficiency while also being made aware of the many programs and services available to improve their livability and the surrounding community.

To identify target neighborhoods, the City used 2000 U.S. Census data and housing stock to draw distinct boundaries for the participating neighborhoods in the pilot. And while the program began as an income-based initiative, there was no formula created to select particular neighborhoods. Since the outset of the program, Neighborhood REACH has expanded to include older neighborhoods with a large percentage of old homes that are good candidates for energy improvements.

The City officially launched the Neighborhood REACH program on Dec.11, 2010 and initially targeted 2,680 homes. It will enter its third year in December 2012, having served more than 3,000 residents and resulting in an estimated 6,300 MWh of annual savings.

### **Problem/Objective**

Paring overall energy costs city-wide is a tall order for any community. This involves community outreach and resident interaction, materials, staffing, technical expertise and other components that demand budgetary resources. The City of Tallahassee, like many municipalities, faces cost and resource restrictions that challenge it to devote resources to adequately meet demands, and forces city personnel be creative when maximizing the resources at their disposal.

The overarching challenge for the City in terms of energy efficiency was promoting its energy programs and other city services as widely and cost-effectively as possible to obtain resident participation. Despite outreach and marketing efforts, some citizens remained unaware of the City's array of energy efficiency services or best energy practices and, as such, were using more energy in their homes than needed. For instance, prior to the REACH initiative, residents in the City's Bond neighborhood – a community of nearly 800 residents (Fig. 1) – used on average eight to 15 percent more energy per household in winter months than the citywide average.

Further, many of these residents lived in older neighborhoods with aging buildings. This contributed to higher costs not only at an individual level, but also for the city at large. The City developed Neighborhood REACH as a way to both promote its array of energy-related programs and services while directly assisting citizens with energy-related matters and providing educational resources.

Of course, launching such an ambitious program did not come without operational challenges. During the planning process, for instance, one of the major challenges faced was understanding how the community would respond to the REACH approach, or how city crews would be received in neighborhoods. City staff hoped that crews would be welcomed into neighborhoods to help with upgrades, but knew that initial community outreach and program championing was necessary before implementation.

The growing popularity of the program created a planning challenge. As news about the REACH program spread to other communities, the City received calls from customers outside the designated REACH neighborhoods inquiring about the program and wanting to know when REACH would advance to their neighborhood.

After a week or two in the field, another challenge emerged. Occasionally, homes were found in such disrepair that the basic energy efficiency measures offered through the program would have little to no effect. For example, a hole in a home's roof or numerous broken windows would negate any efficiency upgrades realized by weather-stripping or caulking. Assisting these customers would require much more than the standard measures deployed through the REACH program.

The final challenge was staffing. The Neighborhood REACH program is part of the City's larger demand side management (DSM) initiative. The City set aggressive DSM goals in 2008 and contracted with an experienced third party firm to serve as DSM program manager rather than hire additional staff to implement the upcoming programs. The desire was to have experienced personnel in the field and back office in order to meet the needs and inquiries offered by community residents.



leak repair grants. Each of these is an existing utility program that has seen an increase in use due to the Neighborhood REACH program.

The Neighborhood REACH program also offers the City an opportunity to showcase the public works services it provides on a continual basis – activities that many citizens may not know exist or regularly occur. Working concurrently in the community with the Neighborhood REACH program services, workers offer a more visual reminder of the services provided. This typically includes street repair, streetlight repair and sidewalk repair, as well as cleaning out storm drains to show how impactful the City is on the community's day-to-day life.

### **Obtaining Neighborhood Buy-In**

One of the greatest challenges to making the Neighborhood REACH program a success is obtaining cooperation from the customers it serves. Without families allowing the City to service their households, energy efficient measures cannot be installed and savings cannot be realized.

To overcome initial skepticism and concern, city staff engaged the local community early in the process. They provided educational materials at local churches and community centers, and enlisted local community advocates to champion the program and speak at local neighborhood association meetings and gatherings. Before beginning work in each community, the City holds a neighborhood kickoff event that allows residents to meet the installation team and utility auditors prior to visits to their homes. This increases resident comfort, allows the customer to learn more about the program and gain a better level of education on energy efficiency, and helps the City reassure residents that the program is city-sponsored. Further, the utility solicits input from residents directly on services they would like to see and feedback they currently have regarding the utility/community relationship.

Additionally, a letter from the mayor is mailed to customers prior to the kick-off event, yard signs are posted in the neighborhoods, flyers are distributed to local churches, and staff goes door-to-door to answer program-related questions and invite residents to attend the kickoff. Through word-of-mouth, the REACH message quickly spreads throughout the community, and field crews find customers to be very receptive when they eventually meet face to face. The efforts pay off. For example, more than 90 percent of Bond community residents chose to receive Neighborhood REACH services.

### **Other Findings**

Other tactical issues faced the City as it deployed the REACH program. These necessitated administrative flexibility, allocation of outside resources and other unplanned measures.

Due to the overwhelmingly positive response to the Neighborhood REACH program, the City realized it did not have the resources or capacity to respond to all requests for assistance. REACH began as a two-year pilot program, and the City budgeted funds for only a certain number of homes to be served during the pilot. However, the City identified a way to satiate requests from residents outside of the initial boundaries that were set. For those customers who resided outside the REACH neighborhoods but would otherwise benefit from REACH services, the City expanded the program to create the "*mini-REACH*" program -- where a home energy auditor conducts an energy assessment and installs a few of the key energy measures for the customer. This helped provide assistance to residents in need without having to provide the array of resources offered to previously-identified neighborhoods under the broader REACH program.

Another finding involved several instances where crews would audit a residence and realize that due to greater amounts of disrepair, topical energy measures offered by the program would do little to increase the home's overall efficiency. The solution was to further expand the cross-coordination by seeking assistance through the City's Emergency Home Repair Program (EHRP), a grant program administered by the City's Economic and Community Development office. EHRP provides funding to eligible customers for repair of roofs, windows, doors, floors, plumbing, and other measures. Most REACH customers were unaware that they were eligible for EHRP assistance. Now, through direct communication, the REACH field team identifies potential customers and links them with EHRP administrators as well as other social service agencies.

With a high level of resident participation, the City chose to outsource some of the coordination and implementation of the program, including the field staff responsible for installing the measures. The arrangement has worked well, as the contractor team continues to be very responsive to city and customer needs.

### **Top Management Support in Program Financing**

The City of Tallahassee owns and operates the electric, water and gas utilities serving the community and support for the REACH program comes from the very top. The role of the mayor and top city officials started with leadership and direction, providing the budget and framework from which to design the REACH program. As REACH neared the implementation stage, their role became one of advocate for the program in the community, whether participating in the kick-off events or speaking to neighborhood organizations. They became the early champions of the program, providing visibility and credibility to the REACH message. Today, the leadership team has an additional role, as a sounding board to the communities served. By listening to residents and community leaders, the mayor and city leaders are in a better position to guide the evolution of the REACH program. Throughout the pilot program, REACH has been in a state of continuous improvement.

The Neighborhood REACH program is largely funded through the City's demand-side management (DSM) program, which receives funding through the Electric Utility's Capital Improvement Projects fund. Approximately \$1.5 million had been spent on implementation of the REACH program during the two-year pilot. DSM funding is also used for grants that support ceiling insulation, HVAC maintenance and duct leak repair for REACH participants. The local Community Redevelopment Agency (CRA) contributed funds to replace electric water heaters with natural gas and improve the efficiency of central HVAC units for qualifying REACH customers. The City's gas utility also provided funding and services to help qualified customers switch to natural gas appliances.

In addition to the work being done in the home, other city services take place throughout the neighborhood in conjunction with the program, such as repairing sidewalks and broken street lights, cleaning up drainage ditches and empty lots and putting up new street signs. The leveraging of these resources brings dramatic benefits to the community. These activities are covered under the approved budgets for these departments.

The following table describes the funding sources for the REACH program:

**TABLE 1:** Energy Assistance Summary

<b>Energy Conservation Measure</b>	<b>Homes Served</b>	<b>Total Cost</b>	<b>Funding Source</b>
Basic REACH measures include installing CFLs, changing air filters, cleaning refrigerator coils, installing weather stripping and door sweeps, etc. Energy-saving tips and assistance with the e+ Online program are provided as well.	3,080	\$1.5M	DSM
Programmable Controllable Thermostat (PCT)	119	\$12K	DSM
e+ Ceiling Insulation: 100% of installation costs up to \$500	1,000	\$424K	DSM
e+ Duct Leak Repair: 100% of repair costs up to \$500	180	\$83K	DSM/FED
e+ HVAC Maintenance and Hot Water Leak Repair: 100% of repair costs up to \$500	740	\$240K	DSM
e+ Natural Gas Water Heater: 100% of replacement costs up to \$1,200	81	\$97K	DSM/GAS/CRA/GN
High-Efficiency HVAC Upgrade: Available to qualifying customers with CRA, provides 100 percent of replacement costs up to \$4,500	11	\$53K	DSM/ CRA/GAS

NOTES: DSM= Demand Side Management; CRA= Community Redevelopment Agency; GN= Good Neighbor Program; GAS= Gas Utility; FED=Energy Efficiency & Conservation Block Grant

### **Learnings/Recommendations:**

Overseeing a successful pilot program like Neighborhood REACH has put the City of Tallahassee in a unique position to offer insights into the benefits and learnings from combining a traditional energy efficiency program with a more personal, community-oriented approach.

Proactive planning is crucial to ensuring success of a project such as REACH. It is essential to understand the audience, determine the best methods to disseminate information, cultivate “ambassadors” or spokespersons with credibility and create “buy-in” of the project from the beginning. Based on demographics, informal surveys and a preliminary assessment of culture and values, the City developed a customized outreach plan for each particular community. This involved extensive personal visits to churches, civic organizations, grocery stores and community centers as well as homes.

Staff discovered quickly that door-to-door contact works best and provides a positive reflection on the City and its leadership. Developing a relationship before working directly with

residents is important for realizing success. While it takes considerable time to make these personal contacts, staff found that this was, by far, the best way to ensure cooperation among residents and create the comfort level necessary to access homes. For example, utilizing the utility auditors on the traditional energy efficiency programs aided in lending credence to the program as a true utility-supported program and reduced the number of customers who might otherwise refuse to take part in the program because they are not convinced, or are unaware, that the program is city-sponsored.

It is also important to have an experienced contractor who has the required knowledge, expertise and experience to conduct a successful sustainability initiative. Work teams knowledgeable of the area and reflective of the community they serve are key components as well.

The City learned to tie the program into particular community needs and, if necessary, to be ready to add new and unanticipated components that would help ensure the project's success. This could mean solving a long-standing issue in the neighborhood or creating goodwill by providing an additional service.

The City also learned to work hard to ensure extensive and positive media coverage by supplying materials, providing ample advance notice and making the coverage exciting, timely and noteworthy. Supplying media with pre-recorded video segments that can be used for broadcasting also helps tremendously.

Lastly, it is crucial to have supportive and accommodating leadership from governmental officials throughout the project. Having elected city officials play an active role in the project, such as at the REACH kickoff events, was very well received by the community and lent further credibility to the initiative.

## **Community Benefits**

The REACH program has brought a distinct sense of pride, ownership and stewardship to these older, historically lower-income neighborhoods. These urban areas, as defined by the City's census data analyses, have faced hardships from the recent economic downturn and longstanding socio-economic difficulties. Communities are becoming enriched by inter-agency coordination of public services, door-to-door education, infrastructure improvements and home energy-saving upgrades.

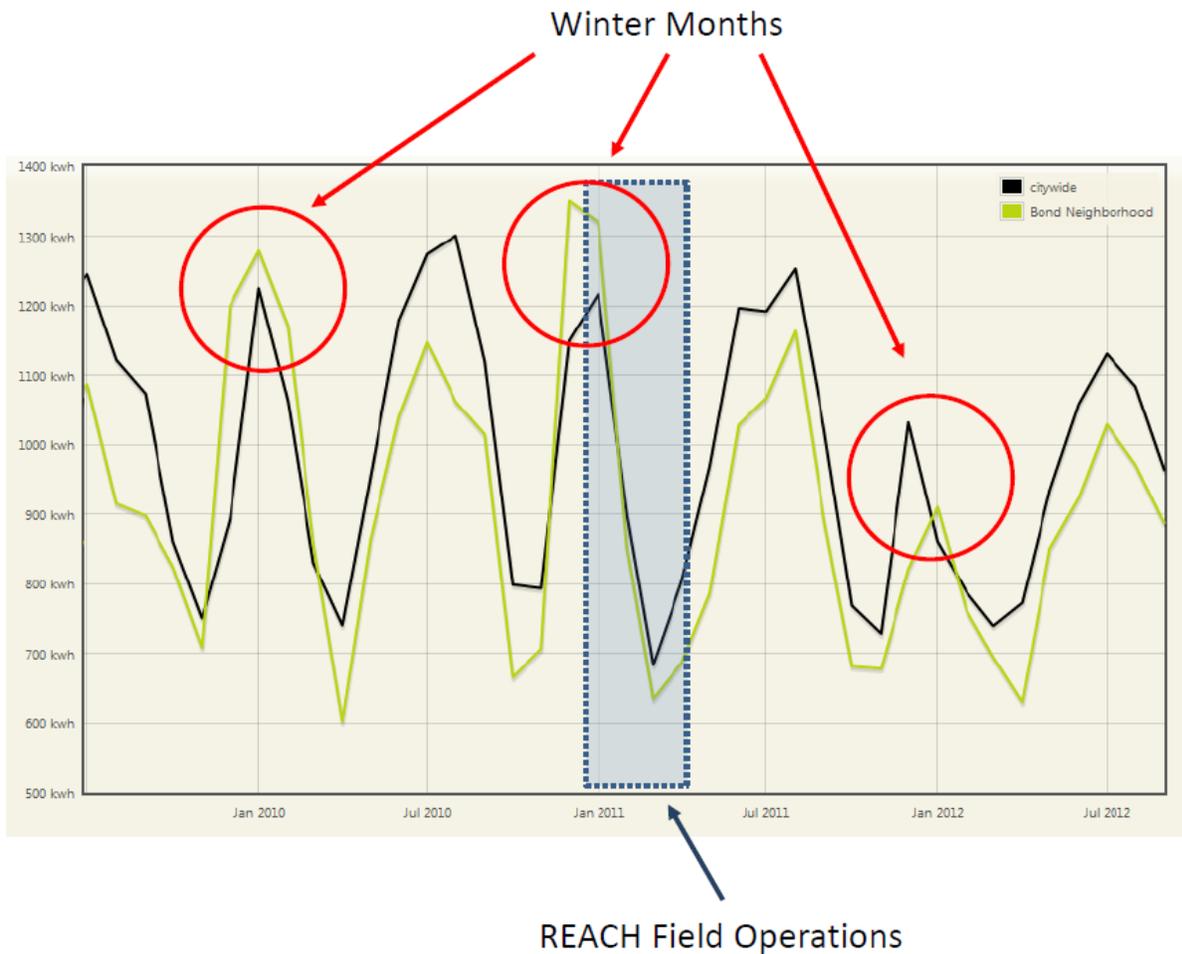
By going door-to-door and spending up to an hour in each participating home, REACH professionals have been able to make personal connections, promote programs, build relationships and find problematic living conditions warranting immediate attention and intervention. Teams have even found a few residents who did not have the ability to ask for help and were living in uninhabitable conditions that required extensive assistance and interagency coordination among social services. This has resulted in newly established governmental liaisons and cooperative initiatives that will continue to benefit others, not only within project boundaries, but throughout Tallahassee.

By offering hands-on training in efficiency techniques, opportunities for grants and assistance programs and free weatherization measures, the City has empowered customers with the necessary resources to reduce their home energy costs and improve their daily lives. With lower monthly utility costs, for instance, families will have greater disposable income to meet their basic needs in the wake of higher gas prices, cost-of-living increases and an increasingly volatile economy. In Tallahassee's Bond neighborhood, for instance, residents saved an average

of \$18 to \$25 during winter months and saw a steep decline in overall energy usage in those months (Fig. 2). REACH also helps stimulate jobs for local contractors providing some of the additional improvements to the homes.

Community feedback has been extremely positive and indicative of program success. Hundreds have attended the kick-off events and have inspired others to take advantage of the City's many Energy Smart Plus (e+) products and services, which include residential and commercial HVAC rebates, Energy Star appliance rebates, a nights-and-weekends pricing program, natural gas appliance rebates, energy efficiency loans, ceiling insulation grants, and gas water heater replacement. As the project continues in other neighborhoods, the City expects to have positive hard data on energy consumption and behavioral changes.

**Figure 2:** REACH Energy Reduction Chart for the Bond Community



## **Summary: Moving Forward with Neighborhood REACH**

While other municipalities may offer energy-saving programs, the City's Neighborhood REACH program stands out as a model for its unique, holistic, neighborhood-centric approach. It has been designed to utilize a wide range of city services to assist the diverse needs of income-based neighborhoods at a critical time when adverse economic conditions have had a significant impact on families.

The broad-based program pulls together various city services, neighborhood leaders, community advocates, local contractors, homeowners associations and nonprofit human service agencies. Through extensive media coverage and the creation of ambassadors to promote participation, the program has achieved great success.

In fact, the use of the Neighborhood REACH program to consolidate and educate customers about other programs and services that the City and the utility offers has resulted in a more educated customer base and has garnered several national awards for the City of Tallahassee. The City was awarded the 2011 National Livability award from the U.S. Conference of Mayors, of which the Neighborhood REACH program was an integral part of the decision. The City was also named the top public utility in America by the American Public Power Association (APPA) in 2012 and received APPA's 2012 Energy Innovator Award on account of the REACH program's success.

The success of the Neighborhood REACH program will have lasting implications going forward for the City. By reaching residents, making them more engaged with city services and pushing energy education initiatives, the community at large will be more aware and accepting of future city activities and plans. For instance, as the local utility begins to offer time-of-use rates and offer programs built on the smart grid platform, a more educated and energy-savvy customer base will be more knowledgeable of the benefits and more willing to participate. This helps reduce overall costs for the city at large and continues to expand the benefits to the community.

The outpouring of appreciation from residents has been no less than remarkable, both at the kickoff events and on a daily basis while performing REACH work within homes. From children participating in energy poster contests to parents discussing energy-saving techniques with others, it is hoped this program will have lasting effects for years to come.