



Corey Trimmer is an energy auditor and building analyst for the HEAT squad.

photos Expressions by Donna

## The Many Benefits of Western Vermont's HEAT Squad

*Ludy Biddle*

NEIGHBORWORKS OF WESTERN VERMONT

Making homes energy efficient not only saves money, it also improves health outcomes and stimulates the local economy.

In 2010, NeighborWorks of Western Vermont, a nonprofit housing agency located in West Rutland, Vermont, received a grant from the Department of Energy and started the HEAT Squad program. It was betting that low- and moderate-income homeowners would take on the job and cost of making energy improvements to their homes if they had access to three things:

1. A trusted, objective source of information on the new science and technology of efficiency measures that could also connect homeowners with local, trusted contractors
2. Low-cost energy audits
3. Affordable home-energy loans

As an advocate for low- and moderate-income households, NeighborWorks is always looking for ways to make homeownership affordable and sustainable. We work in Rutland County, the third-poorest county in Vermont, and were particularly determined to show the possibilities and impact of this endeavor in places where people said it couldn't be done.

Even before the ink was dry on a contract with Department of Energy (DOE), members of the newly formed HEAT Squad and five volunteers from the Shrewsbury, Vermont, Conservation Commission made a personal call to every neighbor in Shrewsbury, offering them a \$50 audit—much cheaper than the typical \$400 audit. The team also offered to help their neighbors understand and prioritize the results of the audit free of charge and promised them practical assistance with scheduling and monitoring the work of contractors.

Lastly, as a licensed lender and Community Development Finance Institution (CDFI), NeighborWorks was able to offer a low-cost, unsecured 10-year loan with an interest rate of approximately 5 percent, with some credit enhancement funding available to lower-income clients. For many homeowners who accepted these offers, their new energy bill and the cost of the loan combined was less than their old monthly energy bill. Forty percent of Shrewsbury's residents signed up for an audit, and the HEAT Squad was launched. To date NeighborWorks of Western Vermont has issued 306 loans with a total value of \$2.5 million, with not a single default.

### Household and Regional Economic Benefits

In 2009 only 26 households in Rutland County went through with an energy retrofit. In subsequent years, with help from the HEAT Squad, working in partnership with Efficiency Vermont, 14 contractors, and many town energy groups, more than 4,000 homeowners have accepted a detailed audit, and more than 1,300 homeowners have completed the energy retrofit process, each achieving about a 30 percent reduction in energy use, or an average of \$900 a year savings (based on 2014 costs). The households have reduced their carbon output, on average, by 5,000 tons per household. The aggregate savings for Rutland County is more than \$1 million every year, which amounts to an ongoing grant to the economy.

The local economy has benefited in other ways as well. Contractors have earned more than \$9 million from HEAT Squad-induced energy retrofits, close to 10 times the \$182,000 earned in 2009. Sixty-two new jobs, names and addresses known, were created as contractors grew their companies to meet this demand. As the efficiency program expands, contractors and homeowners are

venturing into installations of heat pumps, solar panels, and other renewable-energy improvements to their homes.

## A Boost for Sustainable Home Ownership

Prior to outreach by NeighborWorks of Western Vermont, few low- and moderate-income households in Rutland County were able to make energy-efficiency home modifications because the cost was prohibitive. More than 60 percent of HEAT Squad customers earn less than \$54,000 a year. It goes without saying that energy cost reductions, which can total as much as \$900 a year, are particularly meaningful to lower-income households. Indeed, that money sometimes allows a family to avoid mortgage delinquency or foreclosure.

Typically, HEAT Squad's clientele live in older homes (about half Vermont's homes were built before World War II) and maintenance is tough to keep up with. Like Sara, who felt like she lived in a three-sided house, these customers often do not feel physically able to make improvements to their homes themselves, nor can they afford to pay someone to do the work for them or find a lender willing to advance the money on a home that is perhaps financially underwater to begin with.

To address the problem, the HEAT Squad team drew on the experience of NeighborWorks of Western Vermont staff, which has been helping families in Addison, Bennington, and Rutland counties with health-and-safety home repairs since 1986. It uses the tried-and-true method embraced by most of the 250 NeighborWorks America organizations across the country: namely, it provides education, counseling, and technical assistance until the homeowner is secure in new, safe, healthy, and warm surroundings.

## Health Benefits

Studies prove that asthma, which can be environmentally triggered, improves dramatically after home energy retrofits. Simple air sealing and insulation will keep rodents and water out of the house and improve air quality.

A recent study in the South Bronx followed clients 6, 12, and 18 months after they moved into "green" housing units and found significant improvements in their respiratory health: "Outcomes included decrease in continuous daily respiratory symptoms, asthma symptoms disrupting sleep in the past month ... and urgent visits to a healthcare professional ... Clinically relevant outcomes included fewer days with asthma symptoms, or episodes; fewer days of work, school or daycare missed and fewer emergency room visits."<sup>1</sup>

A project in Seattle took families with children whose asthma attacks persisted despite prescription medicines and moved them into what were called Breathe Easy homes. Key features of these homes included airtight exterior construction and walls and insulated foundations and attics, which optimize moisture control. These severely asthmatic children had 63 percent more symptom-free days and a 66 percent reduction in the need for emergency care.<sup>2</sup> And, the families'

situations improved as their children's health improved: families were spared sleepless nights, lost work, and huge medical bills.

## Collaboration Helps Assure Success

The HEAT Squad has almost as many partners in its work as it has customers, including town energy committees, contractors, and other civic groups. Foremost has been Efficiency Vermont, the state's efficiency utility, which manages the home performance contractors and dispenses important financial incentives to customers. Green Mountain Power, which supplies electricity in Vermont, has provided post-DOE funding to support operations and agreed to

on-bill repayment for customers who wish to pay their loan on their monthly utility bill for convenience. In 2014, the Vermont state treasurer provided post-DOE loan capital of \$2.5 million through the state's new local investment program, and recently Bank of America Merrill Lynch has rounded out the circle of investors with a private capital infusion of \$1.5 million.

NeighborWorks America has provided a grant to pilot the expansion and adaptation of the HEAT Squad to a NeighborWorks affiliate called Fahe, which provides similar services through a network of 57 agencies in five states of Appalachia. Work has begun with the Housing Development Alliance in Hazard, Kentucky, where, with the cutbacks in coal production, electricity costs are rising, and lower-income households that are already challenged will have even more pressure on their household budgets unless some costs can be reduced through energy savings.

NeighborWorks of Western Vermont and the HEAT Squad are subject to the perpetual challenge of finding the resources to continue operations, and 2016 is a pivotal year. Following the completion of the DOE grant period in 2014, the HEAT Squad began performing the

energy audits in-house using certified energy auditors and charging participating contractors project lead fees.

However, the secret to the program's success with so many customers is the labor-intensive education, counseling, and technical assistance offered, along with the CDFI-style underwriting of loans. Until such time as 20 percent (as opposed to today's 5 percent) of Vermonters are making energy retrofits, the model that gets homeowners, particularly low- and moderate-income homeowners, to the other side of these projects and gains them so many ancillary benefits is the HEAT Squad model. For it to continue, the HEAT Squad will need ongoing public support.

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## Endnotes

<sup>1</sup> E. Garland et al., "Impact of LEED-Certified Affordable Housing on Asthma in the South Bronx," *Progressive Community Health Partnership* 7, no. 1 (Spring 2013): 29–37.

<sup>2</sup> "A New Prescription for Asthma Sufferers: Healthier Homes" (report, National Center for Healthy Housing), [http://www.nchh.org/Portals/0/Contents/breathe\\_easy\\_r2.pdf](http://www.nchh.org/Portals/0/Contents/breathe_easy_r2.pdf).



"We might as well have been living in a three-sided house, our old farmhouse was so drafty and cold, but I never believed anything could be done about it until the HEAT Squad explained it all and did it all for us."

—Sara, an early HEAT Squad customer