

Final Report of SMMC EECBG Grant

Executive Summary:

- I. In June 2010, Sustain Mid Maine Coalition (SMMC), The City of Waterville, and the Town of Winslow were awarded an EECBG grant administered through Efficiency Maine Trust (EMT). To simplify contracting, The City of Waterville, engaged KVCAP as the contract administrator and fiscal agent. John Reuthe (writer) became the program manager in August of that year working as an independent contractor for KVCAP. Peter Wintle, was the KVCAP administrator.

The grant as written in 2009 was aggressive as to what it intended to accomplish and after the award the SMMC Energy Committee with the permission of Efficiency Maine made some changes; clarifying the goals and eliminating some of the tasks to manage the program with its tight budget. Some of the items eliminated related to solar hot water installations, use of AmeriCorps volunteers and high school students to assist with weatherizations. The use of KVCAP Energy Auditors was also dropped in favor of using independent Efficiency Maine approved energy advisors.

The goals were simple. Over the next 2 year period, I was to provide in-home energy consultations to residents or apartment owners concerning their energy use for heating and domestic hot water and if appropriate recommend they engage an Efficiency Maine Certified Energy Auditor to do an approved audit. We would provide a modest rebate incentive (\$200). If the resident proceeded with the recommended weatherization measures, we provided an additional incentive upon completion of that work (\$100). To support the Federal intention of the Energy funding, the work needed to be done by an approved contractor (not by the homeowner themselves).

II. **Data:**

Acquiring some basic data was relatively easy. For example using the Tax Assessor's data base for both municipalities gave us ownership of properties, basic square footage, age of the property and a photo. Acquiring this information was done prior to a in home consultation. If an energy audit was performed then we had to rely on information provided by the auditor. Initially when Efficiency Maine was offering multiple rebates, the auditors were required to input the information into Real Home Analyzer (RHA) report in order for the homeowner to receive any rebate. It was a labor intensive process for the auditor. Once the rebates ended, the auditors used other software packages unless the homeowner was applying for a PACE loan which required a RHA report. It was a relatively simple task to get summary RHA data from

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Efficiency Maine. The advantage of the RHA report is it provided some modeling and forecasting as to how much energy thus fuel would be saved.

Not using the RHA software did present a problem for us as to how to confirm that weatherization and test out were done. After much discussion with the auditors and some members of the energy committee, it was decided that we would accept a blower test as confirmation but no modeling. Also the auditors would charge the homeowner an additional fee to do the test out. As a result some decided to forego the additional expense and \$100 our closeout rebate.

Because we had direct resident contact and our rebates for audits, we have solid confirmation to that point. Weatherization confirmation created a challenge for us to determine how much work has been done and its impact.

III. Residential Energy Program Performance:

Sustain Mid Maine Goals:

300 In Home Energy Consultations*

120 Home Energy Audits*

100 Weatherizations*

*Sustain Mid Maine used structures as the goal description for audits and weatherization but Efficiency Maine used housing unit as the unit of measure. All the Real Home Analyzer reports generated by the Energy Advisors for EMT were based on housing units

**In Home Residential Energy Consultations: 345 Completed/Goal 300=
115%**

With the help of marketing programs mentioned later in the report, property owners in Waterville and Winslow became interested in beginning the process of exploring weatherization of their homes. The consultation required no financial commitment. With the help of the tax records that provided square footage and the homeowners heating records, we could determine fairly quickly if they had significant opportunity to save money by having an audit. In addition to qualifying the home for energy savings, we also qualified the homeowner's interest in investing in the improvements. These two criteria made the homeowners good prospects for auditing and weatherization. Many times we were able to help the homeowner make improvements themselves

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when they were reluctant to invest in an audit or weatherization due mainly for financial reasons.

Audits: Goal = 120/145 completed = 125% (SMMC goal) and Based on EMT measures 273 housing units = 227%

The audits took a bit of sales work but generally if the property needed work; it was a fairly easy task to convince the homeowner to spend \$400-\$750 or sometimes more for an energy audit. We never heard one complaint from our residents that the audits were not worth it, In fact, we heard the contrary, that the audits gave them great information to plan the steps for weatherization.

Weatherizations: Goal = 100/ 50 structures completed = 50% of SMMC. Based on EMT measures 173 housing units = 173% of goal.

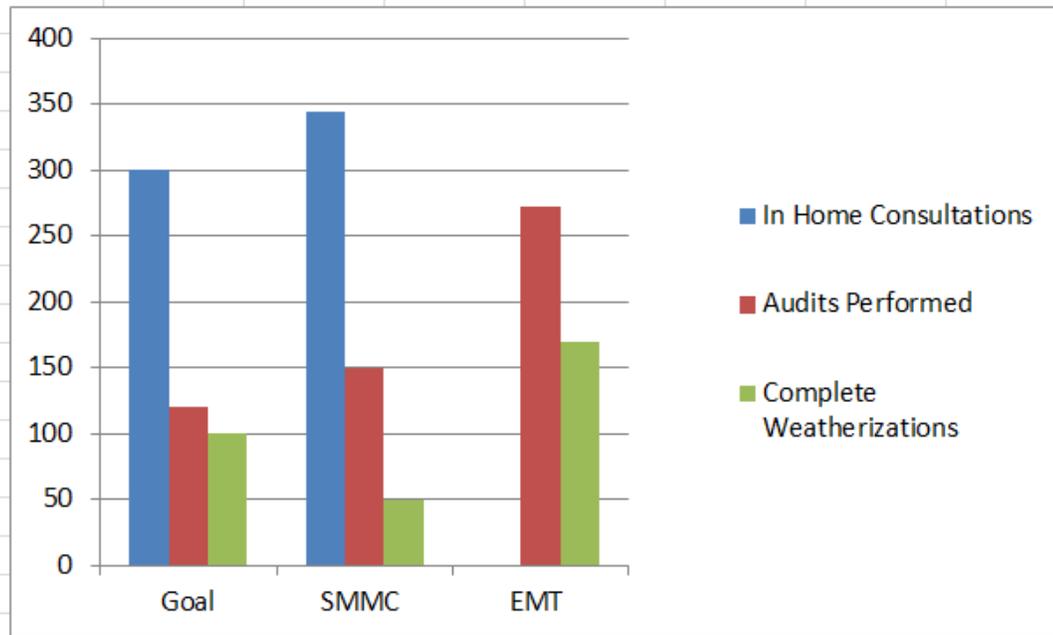
Weatherization was the big nut that was challenging for our residents. In the second half of 2010, Efficiency Maine Trust (EMT) rebates provided great incentives(thousands of dollars) to weatherize but those expired in December of 2010. As a result, finances became the stumbling block for many to move ahead. The average weatherization costs over \$8,000.

In April 2011, Efficiency Maine launched the Property Assessed Clean Energy (PACE) loan program. Waterville and Winslow had both passed requisite ordinances to allow their residents to participant in the program. This early passage of ordinances along with our residents enduring high oil prices in the winter and the prospect of even higher prices brought their attention back to our program. Many of our single family home residents could not meet the financial qualifications or were hesitant to commit to a loan. As a result we did not make the SMMC goal of 100 structures weatherized.

Owners of multifamily housing units were particularly interested in cutting their heating costs and took the first steps by requesting consultations. Many then followed up with an energy audit and weatherizations. Thanks to the number of multi-family units being done we more than exceeded the EMT weatherization goal. .

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While we reached or exceeded all our year to date goals and in many cases our program goals. We are still challenged by lagging weatherization of residential structures in Waterville and Winslow.



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IV. PACE:

The Property Assessed Clean Energy (PACE) loan program began in April with much fanfare and interest from our residents. It at first appeared that we would see a lot of activity with this new incentive. That turned out not to be the case. While the loan qualifications were liberal the debt to income ratio turned out to be a major challenge along with the reticence of our residents to incur any additional debt in a shaky economy. Those who could afford to finance their weatherization projects also found the local banks to be more competitive with their terms. The average loan for our area is \$12,900. 39 residents have applied for PACE Loans, 13 funded, 4 withdrawn, 18 denied, and 4 waiting loan closing

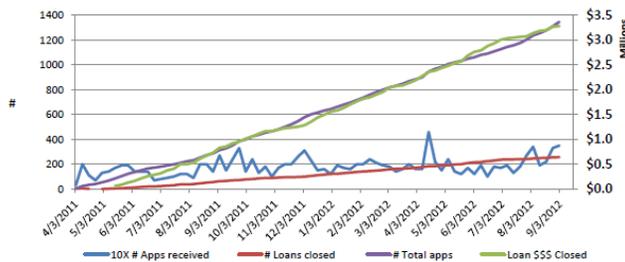
State Wide Activity Summary:

Maine PACE and PowerSaver loan program update

As of:	9/2/2012
# PACE Municipalities	147
Cummative Applications	1453
Cummulative Declined Loans	679
Inactive Applications	340
Applications In Process	178
In Process Application \$\$\$	\$ 2,180,447
Cummulative # Closed Loans	256
Cummulative \$\$\$ Closed Loans	\$ 3,279,634
Average PACE Loan Amount	\$ 12,811
Applications received 4 weeks	109
Applications declined last 4 weeks	54
Loans Closed last 4 weeks	12



Maine PACE and PowerSaver LOAN TRACKER



PACE loan applications and closings have increased recently with the launching of TV, radio and tax bill mailing campaigns. A slow down in closing traffic occurred in July, but appears to be surging back to June levels. Half of the closed PACE loans continue to be at the maximum loan amount of \$15,000. Declined applications are due to either a lack of any home equity or a debt-to-income ratio above 45%. Inactive applications are significantly online applications that have not moved forward in the process either due to not being in a participating PACE municipality, a lack of sustained interest, or an inability to coordinate projects with contractors. Municipalities across the state continue to express interest in participating in the program and more than 200,000 brochures are being inserted into property tax bill mailings in more than 50 municipalities across the state.

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V. Hastings Award:

In June 2011, Efficiency Maine Trust awarded the SMMC Residential Energy Program with the Hastings Award in recognition of our program and its impact on the community. This was a great honor for all the hard work our volunteers and energy auditors have done to make this program very successful. From the Efficiency Maine web site is a description of the award and criteria for award.

Philip C. Hastings, the Founding Director of Efficiency Maine will be remembered for his extraordinary patience, sharp intelligence, and dedication to energy efficiency. To honor his memory, the Philip C. Hastings Award recognizes the individual or organization whose exemplary efforts have furthered Maine's goals of energy efficiency and environmental enhancement.

Criteria for award: Nominees for the Philip C. Hastings Award should meet the following criteria:

1. Demonstrated extraordinary support for Efficiency Maine. This demonstration could take multiple forms such as promotion of the program among peers, public support of the program through the media, or support before the legislature.
2. Advanced the mission and principles of Efficiency Maine and its goals which include: increasing consumer awareness of energy efficiency; creating favorable market conditions for efficient products or services, promoting sustainable economic development and reduced environmental damage.
3. Provided superior service or support to the community
4. Made a positive impact by leading their profession towards more rapid adoption of energy efficient practices or technologies.



Mike Stoddard, John Joseph, Mike Heavener, John Reuthe, Peter Wintle

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V. Volunteers:

The Energy Committee of the Sustain Mid Maine Coalition provided oversight to the Residential Energy Program and the District Energy Project. The following individuals have collectively given over 1200 of service to the committee. Also I want to thank and recognize Colby and Thomas College's participation over the past two years. Most of the students listed graduated this past June.

Energy Committee

John Joseph, Ph.D.	Professor of Economics Thomas College
Tom Tietenberg, Ph.D.	Retired Professor of Economics, Colby College
Dick Thomas Ph. D.	Psychologist, Maine General
Elery Keene	Retired Executive Director of KVCOG
Mike Heaver	Town Manger Winslow
Mike Roy	City Manager Waterville
Ken Fletcher	Town Council Winslow
Greg Hale	Project Manager, SAPPI
Ray Huard	Representative of Bill and Joan Alford Foundation
Greg Brown	Waterville City Engineer
Charlie Holly	Energy Auditor
Bill Basford,	Commercial Auditor and Professional Engineer
Dana Durand	KVCC

Colby College Participants:

Philip Nyhus, Ph.D.	Professor
Manny Gimond	GIS Specialist/Instructor
Susanne MacKenzie, PhD	Visiting Professor
Peter Smithy	student
Mackenzie Nichols	student
Rachael Mack	student
Max Pollinger	student
Kelly Kneeland	student
Noah Teachey	student

Thomas College Participants:

John Joseph, Ph. D.	Professor
Jim Chapman	Instructor
Kelsey Hoyt	Student
Ethan West	Student
Cori Prisco	Student
Jackie Merchant	Student
Nichole Meachen	Student
Kristen Loubier	Student
TJ Collins	Student

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Tax Assessors: These two individuals played important roles in assisting us in identifying properties and confirming ownership for the residential energy program. In addition, there was the research required in determining the thermal load for the two communities as needed by District Energy.

City of Waterville: Paul Castonguay
Town of Winslow: Judy Mathiau

VI. Our Participating Energy Auditors:

David Couture
Charlie Holly
Bo Jespersen
Keith McPherson
Dion Olmstead
Gerry Smith
Clough Toppan

VII. Residents Feedback:

KVCAP, the program's fiscal agent, sent surveys to everyone who has participated in the program. We received a response from about half of the participants which was overwhelming in support of the program. Many felt that SMMC and the municipalities should attempt to continue the program. The idea that they could receive free advice about their homes prior to committing to an energy audit was beneficial. Nevertheless, 77% of those residents receiving a consultation proceeded with an energy audit.

Residents, David and Alice Anderman were interviewed expressed great support and enthusiasm for the program and guidance they had received beginning with

- Consultation
- Attending the KVCC class "Weatherization for the Homeowner"
- Energy audit
- Weatherization

Their fuel use has been cut in half and the house is very comfortable. Before they had spent the winter months huddled in the kitchen around a wood stove. They are featured in an 30 second TV spot for Efficiency Maine –"Save Like a Mainer"

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VIII. Marketing:

Over the course of this past two years, we used a variety of marketing and advertising methods and efforts. Some were successful and others were not productive. Generally, the best efforts were those that were personal whether it is meeting people at large events such as the Taste of Waterville or a display at The Home Depot.

- **Radio Spots:** We did 4 weeks of radio spots on two different stations. While it was relatively inexpensive for the coverage area, it resulted in no calls. The spots themselves were informative, but evidently the clients we service don't listen to the radio.
- **Information Booths:** We manned a variety of information booths at a number of local home improvement stores such as Home Depot and Campbell's True Value. These proved to be effective in getting our message out and increasing the interest in the community to weatherization and its benefits. We also setup booths for "Taste of Waterville", the Winslow 4th of July Celebration and the Inland Hospital Woman's Health Fair.
- **Newspaper articles:** Whenever a newspaper article appeared concerning weatherization activities, it caused a spike in interest. This was true whether it concerned our own SMMC project or something else in the state. Scott Monroe from Maine Today Media did several articles that not only appeared in the Morning Sentinel but also in several other papers in the state.
- **Tax Bill Inserts:** In the Winslow tax bills, we inserted information about both the PACE program and the SMMC Residential Energy Program. This by far created the strongest response that surprised us all. Unfortunately we were not able to do this in Waterville because of the construction of the tax bill mailer. We are investigating away to do this in Waterville when the new tax bills are mailed in the fall. This was very effective in part because it came directly from the municipality validating the program.
- **Gender:** In a vast majority of the cases, women made the initial decisions to have a consultation and audits. While the potential for saving money was important, comfort played a large role.

IX. District Energy:

Originally there was a small budget for exploring the concepts district energy. With the reconfiguration of the residential energy program, additional funding was available to expand the District Energy program. The first step was to develop a project charter to help us stay focused on our mission.

Project Charter

Opportunity Statement- Central Maine has an opportunity to build an energy district to displace #2 fuel oil, #6 fuel oil and market electricity. This opportunity would develop a new local energy infrastructure to provide the Mid Maine economy with an economic advantage that would make local business more profitable, provide lower cost energy to local individuals and attract new businesses to Central Maine. This would result in keeping business and local families in town, attract new business to the area and better protect our environment.

Community / Business Case- This energy district has the potential to reduce business and residents heating costs from \$45.72/MMBtu for oil to \$24.03/MMBtu for wood chips for a 45% reduction in costs. (This is from page 15 of Montpelier District Energy Study Oct 15 2008) The power production would be 8.2 cents/KWH from this same study.

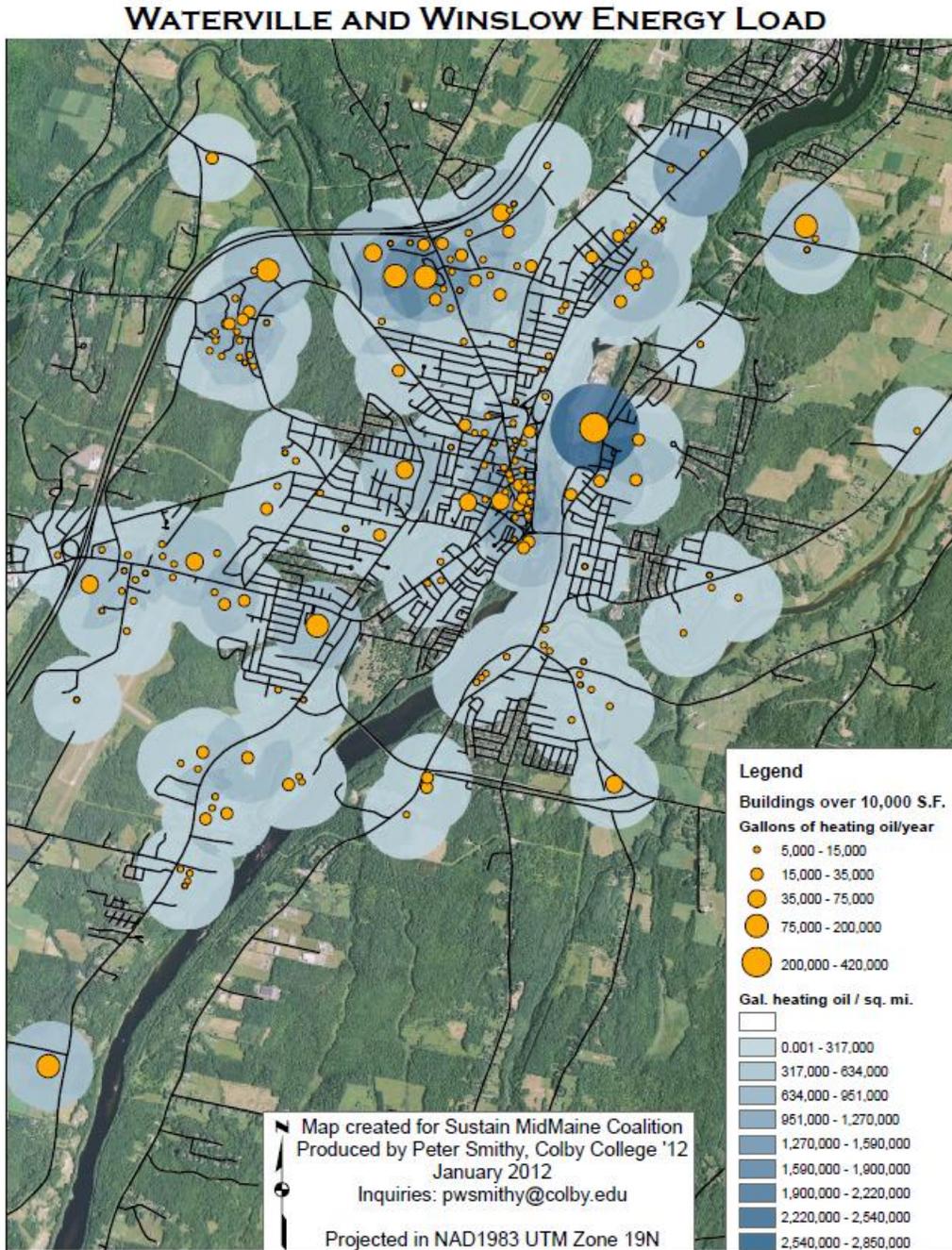
Additionally there will be:

- Reduce emissions from centrally manage Combined Heat and Power facility.
 - The lower energy costs will attract new business to the local area and create jobs.
 - To determine the current and potential future thermal and electrical load for the Central Maine area. Daily max and min and yearly max and min
 - To determine what would the order of magnitude project cost, project savings, simple payback and environmental impact for realistic energy district options.
- One of the first and most challenging tasks was to determine the thermal load for Waterville and Winslow and then map it. For this we used several Colby College

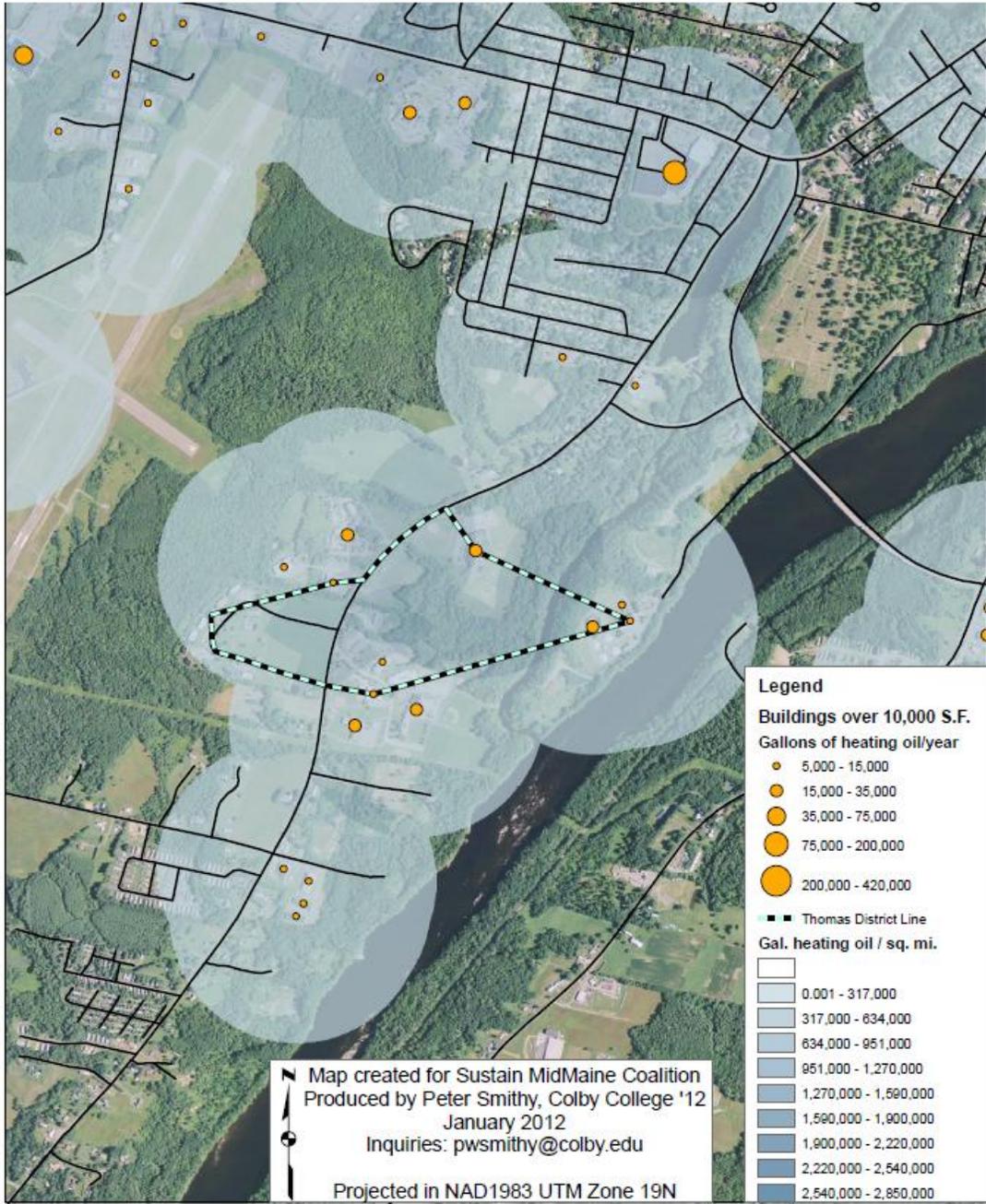
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students to help and their professor Philip Nyhus and GIS Lab Instructor Manny Gimond. Bill Basford also put an extensive amount of time doing research on the project.

➤ **Example of Thermo load map:**



**WATERVILLE AND WINSLOW ENERGY LOAD
MINI-ENERGY DISTRICT: SEWER TREATMENT PLANT**



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X. Financial

We finished the grant with a surplus for several reasons.

- We did not use all the rebate funds because residents did not complete weatherizations
- Funds remaining from the marketing budget
- Funds remaining from District Energy

Because we met all the performance goals required by Efficiency Maine Trust, SMMC will be able to retain those funds, \$11,040 for future use. This is a good faith estimate is subject to final program audit confirmation and action by the City of Waterville to complete the transfer to the SMMC account.

		Budget	Actual	Dif
Program Management				
	Residential Energy	\$84,000.00	\$84,000.00	\$0.00
	District Energy	\$12,500.00	\$12,500.00	\$0.00
	Coordinator	\$2,000.00	\$2,000.00	\$0.00
Marketing		\$13,000.00	\$8,009.52	\$4,990.48
	Homeowner Audit Rebates	\$36,000.00	\$34,200.00	\$1,800.00
	District Energy Program	\$6,250.00	\$2,000.00	\$4,250.00
	KVCAP Admin Fee			
	Residential Energy	\$15,000.00	\$15,000.00	\$0.00
	District Energy	\$1,250.00	\$1,250.00	\$0.00
	Total	\$170,000.00	\$158,959.52	\$11,040.48

XI. Lessons Learned:

John Joseph said at the very beginning that the program manager's job was more of a sales job than program management. He was very right in his observation. While I knew some of the basics energy auditing and remediation, it was a sales job. At the very basic level was the individual homeowner or small apartment owner who were motivated to do something about their home/building but clearly struggled with the potential cost. For the owner of rental property, it became a matter of helping them determine the ROI of any investment and the good will of their tenants. There was much more to just saving money. Many thought that being uncomfortable and cold was a fact of life living in Maine and only the wealthy could afford such comfort. Here are some of the other things that should be considered if this program were to be reconstituted.

- Budget for mileage expenses. I drove over 20, 000 miles in the two years of the program that was not reimbursed. I accepted that in the beginning with the belief that I would not be driving that many miles.
- Build a database to capture specific information on all the structures visited, audited and weatherized. The bulk of our information was captured by CSG who administered the Home Energy Savings Program for Efficiency Maine. When that program ended, so did that valuable information. It is a significant way to measure how we are doing from a savings perspective and where the work has been done. We know that we have missed significant data as more and more auditors opted not to use the CSG system.
- It was very helpful to have the SMMC Energy Committee play a role of advising me, providing oversight and setting policy. I cannot say enough about the benefit of a strong proactive committee such as the one I served.
- I had too many "bosses" and that structure should be avoided. I have worked for matrix managed companies and found I could maneuver through most issues but it is sometimes not easy and future program managers might find it too challenging

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XII. Conclusion:

The residential energy program has been great for Waterville and Winslow residents. Our housing stock is old and needs a great deal of work to bring it up to acceptable energy use standards. The grant has demonstrated the importance of taking an engineering approach to weatherization. In many cases simple and relatively inexpensive steps can have a major impact on weatherizing our homes. As we learned, it is not necessary to replace expensive items like windows when doing a weatherization.

What did become apparent that simple air sealing of the structure, produced dramatic affects. While we touched a small number of the population, those that we did, noticed a change in the comfort in their home and the money spent for heating.

Finally, from a personal view point, this has been a very enjoyable project to lead. I felt we made a difference for people who typically don't ask for help. The help I received from all members of Sustain Mid Maine and Efficiency Maine Trust has been great. One could not ask for better support. And finally the contribution of Linda Woods the SMMC coordinator. Thank you all!

Respectfully Submitted,

John Reuthe