

New Hampshire Public Utilities Commission



RESULTS AND EFFECTIVENESS OF THE SYSTEM BENEFITS CHARGE

ANNUAL REPORT

October 1, 2017

Submitted to:

**THE LEGISLATIVE OVERSIGHT COMMITTEE
ON ELECTRIC UTILITY RESTRUCTURING**

Representative Herbert Richardson
Senator Dan Feltes
Senator Kevin Avar
Representative Robert Backus
Representative Jacqueline Cali-Pitts
Representative Douglas Thomas
Representative Michael Vose

and to:

THE NEW HAMPSHIRE DEPARTMENT OF EDUCATION

Commissioner Frank Edelblut

RSA 374-F:4, VIII SYSTEM BENEFITS CHARGE

The New Hampshire Public Utilities Commission (Commission) hereby submits to the Legislative Oversight Committee on Electric Restructuring its annual report on the results and the effectiveness of the system benefits charge (SBC).¹ The SBC is assessed on all electric customers to fund public benefits related to the provision of electricity. The current SBC is \$0.0033 or 3.3 mills per kilowatt-hour (kWh) and supports energy efficiency and low income bill assistance. For a residential customer using an average of 650 kWh per month, the SBC is \$2.15 per month. While the initial charge and allocation of the SBC between energy efficiency and low income programs was designated by the legislature, the current law sets a cap on the low income portion (1.5 mills per kWh) but sets no cap on the energy efficiency portion of the charge overall. The Commission has not raised the SBC for energy efficiency programs during 2001 through 2016.² However, on August 2, 2016, the Commission approved a Settlement Agreement in DE 15-137, establishing an Energy Efficiency Resource Standard (EERS). Additionally, the Settlement Agreement included a continuation plan for energy efficiency programs and measures for calendar year 2017. Under this plan, the electric utilities were required to design energy efficiency programs and measures intended to achieve statewide goals of 0.60 percent for electric savings, as a percent of 2014 delivered sales.³ The Commission approved an increase in the SBC sufficient and necessary to achieve this statewide goal.⁴ In addition, the Commission required the utilities to file savings goals for calendar years 2018-2020. Goals for both gas and electric utilities were filed on September 1, 2017 (See Appendix A); however, these goals and related increases in funding have not yet been approved by the Commission.

Energy Efficiency

The SBC funds energy efficiency measures known as the Core programs operated by the state's regulated utilities: Granite State Electric Company d/b/a Liberty Utilities, New Hampshire Electric Cooperative,⁵ Public Service Company of New Hampshire d/b/a Eversource Energy and Unitil Energy Systems, pursuant to budgets and program terms established by the Commission. In addition, each utility offers a few non-Core programs specific to its own customers' needs, also funded by the SBC. While not funded by the SBC, gas utilities also provide energy efficiency programs in a similar manner, with funding for those programs provided by ratepayers, and the Commission now oversees the natural gas and Core programs in a coordinated fashion. Following a collaborative effort, the Core programs began in June 2002. Since then, approximately \$292 million⁶ has been expended on providing energy efficiency measures with expected energy

¹ This report is filed pursuant to RSA 374-F:4, VIII (f). The SBC is authorized by RSA 374-F:3, VI and RSA 374-F:4, VIII.

² During this period, the energy efficient component of the SBC was \$0.0018 per kWh. This recovery mechanism was authorized by the Commission on November 29, 2001 in Docket No. DE 01-159, Order No. 23,850.

³ In addition to the Electric Utilities, the Gas Utilities were also required to achieve, in 2017, statewide goals of 0.66 percent, as a percent of 2014 delivered sales.

⁴ The SBC for Eversource, for instance, increased in 2017 from \$0.0018 per kWh to \$0.0021 per kWh. This increase includes the collection of program costs, including a performance incentive, and recovery of lost revenue.

⁵ Though not fully regulated, the New Hampshire Electric Cooperative's provision of SBC-funded programs is subject to Commission oversight.

⁶ This amount reflects \$268 million reported in the prior SBC Report to the Legislature, plus an additional \$24.2 million approved by the Commission for calendar year 2016 programs (ref. [2016 Core filing](#), page 105).

savings of over 12.7 billion kWh⁷ over the lifetime of the measures. Core programs saved energy at an average cost of approximately 2.26 cents per lifetime kWh over the 2002-2013 time period.⁸ Based on information provided in the 2015-2016 Core filing, the estimated cost to save energy was 3.74 cents per lifetime kWh during 2015 and 2016. During this same time period, the avoided cost of electric supply was 6 cents per kWh.

In 2016, the utilities supplemented the SBC-funded energy efficiency programs with an additional \$2.4 million from the ISO New England (ISO-NE) Forward Capacity Market (FCM) auction. These additional funds are the result of SBC-funded energy efficiency programs that reduce peak load and receive credit for the capacity value they provide as part of the FCM.⁹ Together, the portion of the SBC dedicated to energy efficiency and the additional FCM funds produced \$22.2 million for the 2016 program year.¹⁰

Two pieces of legislation¹¹ have affected the funding for the Core programs over the past 4 years. SBC and FCM funds have been augmented by additional monies from the Regional Greenhouse Gas Initiative (RGGI). One dollar of each RGGI allowance sold, net of administrative costs, is turned over to the electric utilities for Core programs, and the remaining proceeds are refunded to ratepayers. Further, utilities are now required to allocate up to \$2,000,000 per year for use by municipal and local governments for energy efficiency and to allocate at least 15 percent to the income-eligible Home Energy assistance (HEA) program.

In 2014, the enactment of Senate Bill 123 amended RSA125:0 and required that any RGGI funds remaining after allocation to the municipal program and the income-eligible HEA program be allocated to all-fuels, comprehensive energy efficiency programs administered by qualified parties to be selected through a competitive bid process. The electric distribution companies were selected as administrators of those programs. The annual report for year 2016 was submitted by the utilities in July 2017 and is incorporated in this report as Appendix B, 2016 Annual Report, Energy Efficiency Programs Funded Through Energy Efficiency Fund RFP #14-004. The combined SBC funds, FCM funds, and RGGI funds produced \$28.0 million for the 2015 Core programs.¹² For the 2016 program year, the combined funds produced \$26 million.¹³

The Core programs are divided between programs for residential customers and programs for commercial and industrial (C&I) customers. As reflected in the table below, program budgets are allocated to residential and C&I customers roughly in proportion to their respective SBC payments. In 2015 and 2016, approximately 15.5 percent of the overall Core budgets were allocated to the HEA program. In 2017, the HEA allocation increased to 17 percent, consistent with the Settlement Agreement.¹⁴ All customers contribute proportionately to the HEA program, which provides weatherization and energy efficiency measures for low income customers, often in

⁷ Savings reflects 12.0 billion kWh reported in the prior SBC Report to the Legislature, plus an additional 0.7 billion lifetime kWh savings proposed for calendar year 2016 programs in the [2016 Core filing](#), at page 105.

⁸ See page 2 of the [2015-2016 Core filing](#) filed in Docket DE 14-216, at page 2.

⁹ For additional information on Capacity Supply Obligations and the Forward Capacity Market, go to [ISO-NE](#).

¹⁰ Source: 2016 Core filing, at page 2.

¹¹ See HB 1490, Laws of 2012, Ch. 281, and SB 123, Laws of 2013, Ch. 269.

¹² Source: Commission website, Docket Book, Docket No. DE 14-216, 2015-2016 Core New Hampshire Energy Efficiency Programs, [Revised December 11, 2014, page 21](#).

¹³ Source: [2016 NH Statewide Core Energy Efficiency Plan, p. 2](#).

¹⁴ The Settlement Agreement was approved in [Order No. 25,976](#), December 23, 2016.

coordination with and as a supplement to U.S. Department of Energy weatherization assistance funding (WAP).¹⁵ The HEA program is administered by the utilities in conjunction with the New Hampshire Community Action Agencies (CAA).

The primary residential Core programs are:

- ENERGY STAR® Homes, a fuel neutral program under which builders and homeowners are encouraged to construct more energy-efficient new homes using the Home Energy Rating Service (HERS)
- Home Performance with ENERGY STAR® (HPwES), which provides weatherization measures, including home energy audits, air sealing, insulation, and duct sealing, for homes with high energy usage.
- Home Energy Assistance (HEA), which provides weatherization and energy efficiency measures for income-eligible customers.
- ENERGY STAR® Products. In 2014, the ENERGY STAR® Lighting and the ENERGY STAR® Appliance programs were combined into a single program called ENERGY STAR® Products. The combined program promotes increased use and availability of energy efficient lighting products, provides incentives for customers to purchase energy efficient ENERGY STAR® rated appliances, increases consumer awareness of energy efficient appliances, and provides gas utility customers incentives to purchase ENERGY STAR® heating and hot water equipment and controls.
- Educational programs, other than those within the Core programs, such as energy education for students and pilot efforts to explore new program offerings, such as the use of heat pumps and geothermal systems.

The primary C&I Core programs are:

- Small Business Energy Solutions, which provides small to medium sized electric and natural gas customers with incentives to install or upgrade to more energy efficient electrical, mechanical, and thermal systems or equipment such as lighting and hot water measures.
- Large Business Energy Solutions, which provides large gas and electric customers with incentives to install or upgrade to more energy efficient electrical, mechanical, and thermal systems or equipment.
- Municipal Program, which leverages the NH electric utilities' existing commercial and industrial programs, incorporates a fuel blind component, and encompasses a flexible approach for technical assistance.
- Education, pilot efforts to explore new program offerings for C&I customers, energy code training, and commercial energy auditing.

¹⁵ WAP funds are received during the last quarter of the year and expended over the subsequent six-month period. Additional information on the amount and timing of WAP funds can be found on the [OEP](#) website.

The following table summarizes the 2017 programs and related goals that are supported by the SBC funds, including FCM and RGGI funds:

2017 NH Core Program Goals¹⁶

NH CORE ENERGY EFFICIENCY PROGRAMS	EXPENSES ¹⁷ (\$)	LIFETIME kWh SAVINGS	NUMBER OF CUSTOMERS
Residential			
ENERGY STAR® Homes	\$1,570,006	29,797,177	454
HPwES	\$2,865,037	11,362,582	1,253
Home Energy Assistance	\$4,665,744	7,486,579	648
ENERGY STAR ® Products	\$3,025,399	97,969,563	118,444
Other, including education	<u>\$522,749</u>	<u>7,131,184</u>	<u>50,000</u>
Total Residential	\$12,648,935	153,747,085	170,799
Commercial & Industrial			
Small Business Energy Solutions	\$4,477,313	160,802,002	1,006
Large Business Energy Solutions	\$6,975,265	369,553,589	356
Municipal Program	\$2,283,930	74,802,312	405
Other, including education	<u>\$1,343,931</u>	<u>40,436,356</u>	<u>8</u>
Total C&I	\$15,080,439	645,594,259	1,775
TOTAL	\$27,729,374	799,341,344	172,574

A mid-year overview of the 2017 Core program highlights, shown on the next page, demonstrates that they are being implemented successfully and are on track to achieve annual targets. Through June 2017, expenditures are 36% of annual budget, lifetime kWh electric savings are 26% of annual goal and participation is 49% of the annual goal.

¹⁶ Source: Commission's website, Docket Book, 2014 Dockets, DE 14-216, Tab 60, 2017 NH Statewide Core Energy Efficiency Revised Plan, December 12, 2016, page 125-127.

¹⁷ Expenses represent program implementation expenses and exclude utility performance incentives.

**Core NH Program Mid-Year Overview
January 1 - June 30, 2017
Highlights¹⁸**

NH CORE ENERGY EFFICIENCY PROGRAMS	EXPENSES (\$)		SAVINGS (Lifetime kWh)		NUMBER OF CUSTOMERS	
	Actual	Percent Of Budget	Actual	Percent Of Budget	Actual	Percent Of Budget
<u>RESIDENTIAL (NHSaves@home)</u>						
ENERGY STAR® Homes	\$917,607	58%	18,628,062	63%	510	112%
HPwES	\$902,350	32%	5,477,945	48%	228	18%
Home Energy Assistance	\$1,670,150	36%	3,346,863	45%	250	39%
ENERGY STAR ® Products	\$1,387,191	46%	39,650,603	40%	37,479	32%
Other, including education	<u>\$322,725</u>	<u>62%</u>	<u>5,324,000</u>	<u>75%</u>	<u>45,654</u>	<u>91%</u>
TOTAL RESIDENTIAL	\$5,200,023	41%	72,427,473	47%	84,121	49%
<u>C&I (NHSaves@work)</u>						
Small Business Energy Solutions	\$1,546,905	35%	37,554,152	23%	131	13%
Large Business Energy Solutions	\$2,094,018	30%	87,828,486	24%	129	36%
Municipal Program	\$693,789	30%	9,526,419	13%	36	9%
Other, including education	<u>\$337,556</u>	<u>25%</u>	<u>0</u>	<u>0%</u>	<u>4</u>	<u>50%</u>
TOTAL C&I	\$4,672,268	31%	134,909,057	21%	300	17%
	\$9,872,291	36%	207,336,530	26%	84,421	49%

The Commission requires that all energy efficiency programs be cost-effective. The standard measure of cost-effectiveness is to compare the value of the savings achieved over the life of the measure against the projected cost per kWh the utility would have had to provide if not for the efficiency measure. The calculations are complex. The lives of the measures differ depending on the measure installed. The cost that the utility avoids is based on detailed forecasts and analysis of the factors affecting New England's electricity markets.

Over the years, the Core programs have demonstrated consistent cost-effectiveness. For 2017, the utilities estimated an average benefit-to-cost ratio of 1.7:1, using the net present value of total economic benefits compared with the total costs to both utility and customer.¹⁹

Core electric utility program results indicate that the cost per kWh saved has increased since 2003, the first full year of the Core programs, but is still less than the avoided energy supply costs used to screen programs. The estimated cost per kWh saved in the year 2013 was 3.25 cents per kWh. Based on information provided in the 2017 Core Filing, the estimated cost per lifetime kWh saved during 2017 is 3.47 cents per lifetime kWh²⁰ while the avoided cost of supply is

¹⁸ Source of highlights is the Commission website, Electric Division, Core Programs Second Quarter Report, Second Quarter Report, Docket DE 14-216, Tab 115, pages 1-3. Lighting customer numbers are based on the sum of appliance customers and total bulbs (with total bulbs installed divided by 4.0 bulbs per customer).

¹⁹ The benefit-to-cost ratio of 1.7:1 is the composite of the four electric utilities, as proposed in Docket DE 14-216, Year 2017, at page 37, 47, 52 and 57.

²⁰ *Ibid*, page 125 (i.e., \$27,729,374 / 799,341,344 lifetime kWh = \$0.0347 per lifetime kWh).

approximately 6 cents per kWh. The expected increase in cost per lifetime kWh saved is not because the programs are more expensive or less effective but because the measures being installed often involve homes that heat with sources other than electricity, and thus the electricity cost savings are less although the total heating costs borne by customers may be greatly reduced. The construction of new generation to meet increasing capacity needs is usually more expensive than average existing generation costs; investment in new generation to meet increased demand tends to raise retail rates over time. Investments in energy efficiency and demand response therefore continue to be a cost-effective means to address increasing load requirements.

Energy Efficiency Investment In Public Schools

RSA 374-F:4, VIII-a requires that the electric utilities submit plans for program design, and/or enhancements, and estimated participation that maximize energy efficiency benefits to public schools, including measures to enhance the energy efficiency of public school construction or renovation projects that are designed to improve indoor air quality. The table on the following page shows the results for 2016 and January through August results to date for 2017 energy efficiency measures in New Hampshire public schools.

**Overview of 2016 and January 1 to August 31, 2017
Energy Efficiency Measures in New Hampshire's Public Schools
(Projects with zero values for savings and cost are committed projects not yet completed)**

Year	Measure Type	Number of Projects	Total Incentives	Project Cost	Annual kWh Savings	Annual MMBTU Savings
2016	Cooling	6	\$6,819	\$8,019	12,489	0
	CUSTOM	0	\$0	\$0	0	0
	CUSTOM-Lighting	0	\$0	\$0	0	0
	Energy Management System	4	\$56,681	\$197,959	110,418	877
	Heating	1	\$10,000	\$28,571	0	378
	HVAC	7	\$50,915	\$129,668	836	2,810
	Lighting	45	\$719,075	\$2,155,944	2,398,108	0
	Lighting Controls	2	\$1,128	\$2,941	18,174	0
	Motors	0	\$0	\$0	0	0
	Parking Lot lights	26	\$109,224	\$422,436	634,945	0
	Process	10	\$9,218	\$29,280	46,491	0
	Refrigeration	0	\$0	\$0	0	0
	VFD	0	\$0	\$0	0	0
	Water Heating	2	\$1,400	\$4,000	0	71
	Weatherization	7	\$45,054	\$107,354	16,033	1,356
	2016 Total		110	\$1,009,514	\$3,086,174	3,237,494
Jan - Aug 2017	Cooling	1	\$750	\$1,000	6,330	0
	CUSTOM	1	\$1,000	\$1,000	0	0
	CUSTOM-Lighting	0	\$0	\$0	0	0
	Energy Management System	2	\$43,210	\$304,500	50,000	2,150
	Heating	10	\$143,500	\$263,600	0	2,904
	HVAC	1	\$9,248	\$12,330	13,043	0
	Lighting	44	\$743,932	\$1,920,313	2,417,859	0
	Lighting Controls	0	\$0	\$0	0	0
	Motors	0	\$0	\$0	0	0
	Parking Lot lights	5	\$16,401	\$37,384	54,875	0
	Process	2	\$5,365	\$7,155	84,702	0
	Refrigeration	3	\$9,665	\$19,330	28,399	0
	VFD	4	\$9,550	\$0	0	0
	Water Heating	0	\$0	\$0	0	0
	Weatherization	3	\$21,674	\$70,000	173	404
	2017 Total (includes "In Process")		76	\$1,004,295	\$2,636,612	2,655,381
Grand Total		186	\$2,013,809	\$5,722,786	5,892,875	10,950

Considerations for Future Program Design

According to a 2009 study by GDS Associates,²¹ a substantial amount of cost-effective energy efficiency savings continues to be achievable in both the residential and the C&I sectors in New Hampshire. The GDS study provides design and implementation information useful for energy efficiency program improvements.

In 2010, the Legislature directed the Commission to contract for an independent, comprehensive review of energy efficiency, conservation, demand response, and sustainable energy programs and incentives, including recommendations for improvements. The Commission selected the Vermont Energy Investment Corporation (VEIC), through a competitive bid process, to undertake this review. The VEIC report²² was delivered to the Legislature in September 2011 and has been used by Core docket participants when evaluating program offerings.

In 2014, the Commission initiated an informal, non-adjudicative stakeholder process regarding the potential for a New Hampshire Energy Efficiency Resource Standard. The Commission directed its Electric Division staff to develop a preliminary EERS straw proposal and to initiate an informal, non-adjudicative process to solicit feedback from members of the Energy Efficiency and Sustainable Energy Board and other key stakeholders. The report was submitted to the Commission in February 2015. Subsequently, the Commission opened a proceeding to establish an EERS, Docket No. 15-137, that sets specific targets or goals for energy savings that utilities must meet in New Hampshire.

On August 2, 2016, the Commission approved a Settlement Agreement in the EERS proceeding. In Order No. 25,932, the Commission extended the 2015-2016 Core programs an additional year (through 2017) and established annual savings targets as part of EERS. The EERS is a framework within which the Commission's energy efficiency programs will be implemented. The effective date for implementation is January 1, 2018. The framework consists of three-year planning periods and savings goals as well as a long-term goal of achieving all cost-effective energy efficiency. The electric and gas utilities will be administrators of the EERS programs to achieve specific statewide savings goals for the 2017 Core program year and for the first three-year period of the EERS. Specific programs will be subject to Commission approval and such approval will require a demonstration that they are cost effective in subsequent proceedings before the Commission. The order also establishes a recovery mechanism to compensate the utilities for lost revenue related to the EERS programs and approves the performance incentives and the processes described in the Settlement Agreement for stakeholder involvement, evaluation, measurement and verification, and the Commission's oversight of the EERS programs.

Recognition and Awards Attributable to Core Energy Efficiency Programs:

ENERGY STAR® Awards – 2017 Partner of the Year – Sustained Excellence: New Hampshire's ENERGY STAR Homes Program

In 2017, the U.S. Environmental Protection Agency (EPA) recognized the NH Core Utilities with its highest ENERGY STAR award, the Partner of the Year – Sustained Excellence Award, demonstrating a strong commitment to energy efficiency through superior energy

²¹ The GDS Final Report is available on the Commission's website, puc.nh.gov.

²² The VEIC Report is available on the Commission's website, puc.nh.gov.

efficiency achievements and continued leadership in protecting the environment. Specifically, the NH Core Utilities were honored for excellence in implementation of the ENERGY STAR Certified Homes program, including certifying and providing incentives for nearly 700 homes in 2016, for a total of more than 6,900, while growing from an initial two percent market share to close to 20 percent over the past decade. Additionally, the program, conducts builder, code official, and homeowner energy efficiency trainings, participates in energy-related events and disseminates ENERGY STAR information reaching more than 400,000 New Hampshire residents. This recognition represents a significant collaborative effort between the NH Core Utilities and the building trades in New Hampshire who build ENERGY STAR homes that save 10-30% of the energy used by standard homes.

ENERGY STAR® Awards – 2017 Partner of the Year – New Home Builder: Chinburg Properties, Newmarket, NH

The NH Core Energy Efficiency Team nominated Chinburg Builders for the 2017 ENERGY STAR Partner of the Year Award for New Home Builder / Affordable Housing. The U.S. Environmental Protection Agency (EPA) recognized Chinburg for its dedication to energy efficiency, training and for the strong relationships built through the ENERGY STAR Certified Homes Program. Chinburg Properties has been committed to building 100 percent ENERGY STAR certified homes since 2012 and has built nearly 300 ENERGY STAR homes in New Hampshire. The company also promotes ENERGY STAR through their web page, has produced a video featuring a homeowner from the Lorden Commons subdivision in Londonderry and provides training to all staff and new homebuyers about the features and benefits of ENERGY STAR certified homes. Chinburg Properties is committed to comparing the effectiveness of different construction materials on a regular basis, reducing on-site waste and conserving water during the construction process. This is the second ENERGY STAR Award received by Chinburg Properties.

ENERGY STAR® Awards – 2017 Partner of the Year - Home Energy Rater: GDS Associates, Inc.

The NH Core Energy Efficiency Team also nominated GDS Associates, Inc. for the 2017 ENERGY STAR Partner of the Year – Home Energy Rater. GDS Associates has been an ENERGY STAR partner since 2004 and verified more than 250 New Hampshire homes in 2016 for a cumulative total of 8,150 home verifications since 2005. GDS's main office is in Manchester but they work all over New Hampshire with more than 60 builders to successfully construct ENERGY STAR certified homes and provides training to new and existing builders and HVAC contractors.

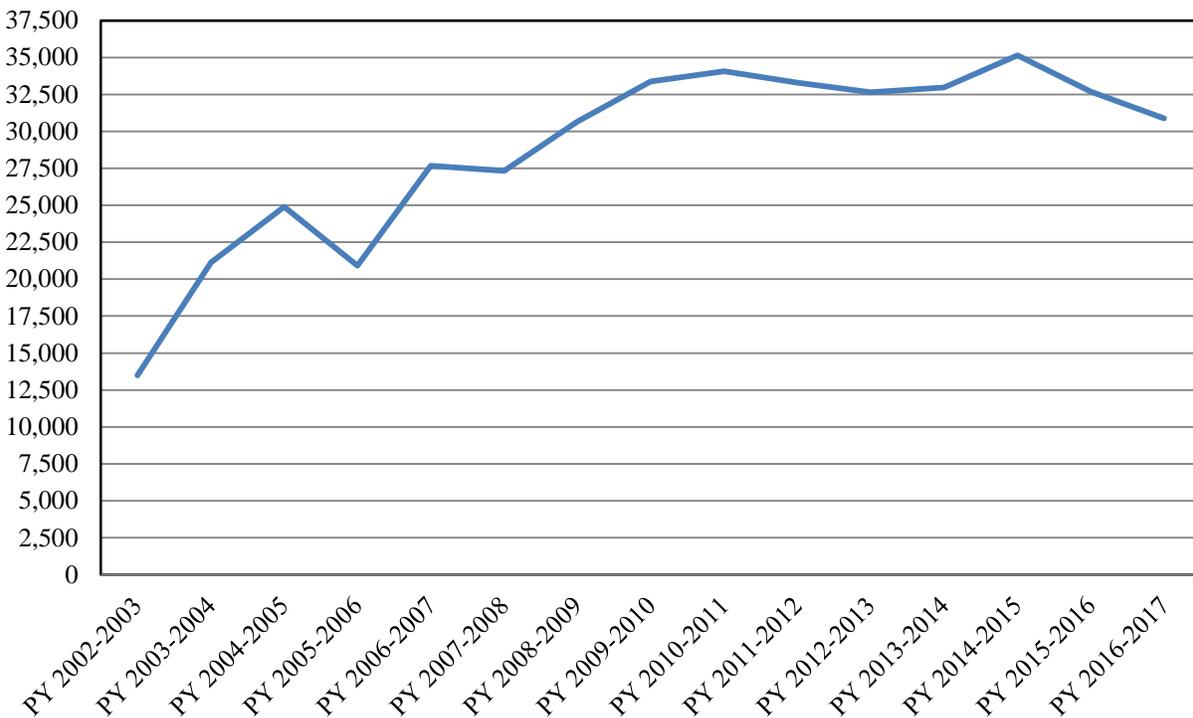
Electric Assistance Program

As directed by RSA 374-F:3, V, the Commission adopted the Electric Assistance Program (EAP) to provide bill assistance to low-income customers as part of electric restructuring. The EAP, which began on October 1, 2002, provides targeted benefits to low-income customers, with those households with the lowest poverty level receiving the highest benefits. Eligibility for the program is determined using the federal poverty level, a measure of income issued every year by the federal Department of Health and Human Services.

RSA 374-F:4, VIII (c) authorizes funding of the EAP through the SBC, and customers of Eversource, Liberty Utilities, New Hampshire Electric Cooperative and Unitil Energy Systems support the EAP through a per kWh charge on electric bills. Approximately \$16M is collected each year through the low-income portion of the SBC to provide bill assistance to low-income households in New Hampshire. The EAP completes its fifteenth year of operation on September 30, 2017. Currently, there are slightly less than 30,000 households receiving this benefit. Over the past fourteen years approximately 343,900 households have received assistance from the EAP.

While the need for and resulting enrollment in the EAP has grown over the past fifteen years, enrollment levels have been relatively steady for the past seven years. During the 2016-2017 program year, enrollment declined slightly as compared to prior years. The average annual enrollment for each program year is shown in the chart below.

**EAP Program Year Average Enrollment
October 2002 through August 2017**



Monthly enrollment in the EAP varies, with the highest enrollments occurring over the winter months and lower enrollments in late spring and early summer. Enrollment in the EAP was lower during the past two winter heating season when compared to prior heating seasons, which may be due to lower winter electricity prices. As is typical, enrollment is expected to begin to increase in October and should continue to increase through April or May of 2018.

Monthly Enrollment												
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2012	33,823	34,340	34,312	34,554	34,803	32,418	31,395	30,718	30,625	30,867	31,275	31,903
2013	33,046	34,202	34,445	34,006	33,613	32,747	32,346	31,814	31,426	31,161	31,546	32,420
2014	33,372	34,015	34,066	34,279	33,537	33,094	32,617	32,653	32,943	33,355	34,149	34,987
2015	35,888	36,511	36,314	36,344	35,921	34,760	34,376	33,929	33,524	32,804	34,149	33,787
2016	33,236	33,605	33,608	33,081	32,496	32,068	31,497	30,986	30,861	30,513	30,394	30,677
2017	31,499	31,664	31,546	31,579	31,439	30,445	30,141	29,895	n/a	n/a	n/a	n/a

The EAP provides bill assistance to New Hampshire residents with incomes at or below 200% of the federal poverty level. The program provides targeted assistance through five tiered discounts. Households with the lowest poverty level received the highest discount. The table below displays the five discount tiers and the income range, by household size, for each tier.

EAP Income Eligibility Guidelines by Discount Tier					
Household size	76%	52%	36%	22%	8%
1	≤ \$9,045	> \$9,045 but ≤ \$12,060	> \$12,060 but ≤ \$15,075	> \$15,075 but ≤ \$18,090	> \$18,090 but ≤ \$24,120
2	≤ \$12,180	> \$12,180 but ≤ \$16,240	> \$16,240 but ≤ \$20,300	> \$20,300 but ≤ \$24,360	> \$24,360 but ≤ \$32,480
3	≤ \$15,315	> \$15,315 but ≤ \$20,420	> \$20,420 but ≤ \$25,525	> \$25,525 but ≤ \$30,360	> \$30,360 but ≤ \$40,840
4	≤ \$18,450	> \$18,450 but ≤ \$24,600	> \$24,600 but ≤ \$30,750	> \$30,750 but ≤ \$36,900	> \$36,900 but ≤ \$49,200
5	≤ \$21,585	> \$21,585 but ≤ \$27,780	> \$27,780 but ≤ \$35,975	> \$35,975 but ≤ \$43,170	> \$43,170 but ≤ \$57,560
6	≤ \$24,720	> \$24,720 but ≤ \$32,960	> \$32,960 but ≤ \$41,200	> \$41,200 but ≤ \$49,440	> \$49,440 but ≤ \$65,920
7	≤ \$27,855	> \$27,855 but ≤ \$37,140	> \$37,140 but ≤ \$46,425	> \$46,425 but ≤ \$55,710	> \$55,710 but ≤ \$74,280
8	≤ \$30,990	> \$30,990 but ≤ \$41,320	> \$41,320 but ≤ \$51,650	> \$51,650 but ≤ \$61,980	> \$61,980 but ≤ \$82,640

During the past 11 months, approximately \$14.42 million in funding was collected for the EAP through the SBC. Approximately \$12.36 million has been distributed in bill assistance to customers during the period October 1, 2016, through August 31, 2017. Administrative costs of approximately \$1.64 million were incurred by the New Hampshire Community Action Agencies (CAA), the electric utilities, and the Office of Strategic Initiative (OSI), formerly the Office of Energy and Planning (OEP).²³

As program administrator, the CAA performs activities such as client outreach and intake, application processing, enrollment of participants, and periodic review of ongoing program eligibility. The CAA also conducts compliance monitoring to ensure adherence to program guidelines. Utility incremental costs generally include expenses for the production and printing of educational materials, such as posters and brochures, customer service, legal services, and information technology support, and represent those expenses that would be reasonably incurred as part of the utility's administration of the EAP, but would not be incurred in the absence of EAP administration. Expenses included in the OSI budget relate to OSI's participation in EAP Advisory Board meetings and other EAP related discussions. The Commission does not charge the EAP for its oversight of the program.

EAP Financial Information					
October 1, 2016 through August 31, 2017					
Balance in EAP fund on 10/1/16	SBC revenue for EAP	Interest	Benefits paid	Administrative costs	Balance in EAP fund on 8/31/17
\$1,460,742	\$14,422,622	\$5,139	\$12,362,689	\$1,644,271	\$1,881,543

Information regarding the number of program participants and the amount of benefits paid, broken out by town, for the current EAP program year can be found in Appendix C. There has not been a waiting list for the EAP since May 27, 2012. Based on projections, no waiting list is anticipated for the upcoming program year. As of September 19, 2017, 29,605 households were enrolled in and receiving benefits from the EAP. Enrollment by discount tier and poverty level is shown in the table below.

Discount Tier	Poverty Level	Number of Households Enrolled as of 9/19/2017
6	Under 75%	5,954
5	76% - 100%	6,501
4	101% - 125%	5,641
3	126% - 150%	5,120
2	151% - 200%	6,389
Total		29,605

²³ Of the approximately \$1.64 million in administrative costs paid during the first 11 months of the 2016-2017 EAP program year, \$1,637,882 was paid to the CAA, \$5,957 was paid to the utilities and \$432 was paid to OEP.

Appendix A

**NHSAVES PROGRAMS
2018 Statewide Goals
Statewide & Company-Specific Programs**

Description	Program Budget ⁽¹⁾	kWh Savings		kW Savings		MMBtu Savings		Customers Count
		Annual	Lifetime	Winter kW	Summer kW	Annual	Lifetime	
<u>Electric Utilities</u>								
Statewide Programs	\$ 31,627,332	74,129,116	929,221,138	10,983	8,943	54,686	1,128,741	140,400
Municipal Program	\$ 2,000,707	4,768,231	67,572,070	941	368	3,926	59,022	132
All Other Statewide Programs								
Sub-total	\$ 33,628,038	78,897,347	996,793,208	11,924	9,311	58,612	1,187,763	140,532
Company Specific Programs ⁽²⁾	\$ 2,995,528	7,366,732	45,779,174	827	795	-	-	92,026
Total Electric	\$ 36,623,566	86,264,079	1,042,572,382	12,750	10,106	58,612	1,187,763	232,558
<u>Gas Utilities</u>								
Statewide Programs	\$ 8,621,413	324,978	4,397,918	65	5	151,156	2,264,823	4,304
Company Specific Programs ⁽²⁾	\$ 536,400	-	-			12,460	41,870	48,000
Total Gas	\$ 9,157,813	324,978	4,397,918	65	5	163,616	2,306,693	52,304
Grand Total	\$ 45,781,378	86,589,056	1,046,970,300	12,816	10,111	222,227	3,494,456	284,862

Notes:

(1) Program budgets shown in this report exclude the performance incentive (PI).

(2) Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.

**NHSAVES PROGRAMS
2019 Statewide Goals
Statewide & Company-Specific Programs**

Description	Program Budget ⁽¹⁾	kWh Savings		kW Savings		MMBtu Savings		Customers Count
		Annual	Lifetime	Winter kW	Summer kW	Annual	Lifetime	
<u>Electric Utilities</u>								
Statewide Programs	\$ 40,936,160	91,651,913	1,166,329,754	13,266	11,161	79,754	1,648,068	180,517
Municipal Program	\$ 2,000,000	4,486,133	63,649,435	874	346	3,904	58,858	133
All Other Statewide Programs								
Sub-total	\$ 42,936,161	96,138,046	1,229,979,189	14,140	11,506	83,659	1,706,927	180,650
Company Specific Programs ⁽²⁾	\$ 3,975,024	11,692,007	72,789,222	1,403	1,324	-	-	147,044
Total Electric	\$ 46,911,185	107,830,053	1,302,768,410	15,543	12,830	83,659	1,706,927	327,694
<u>Gas Utilities</u>								
Statewide Programs	\$ 9,576,709	346,624	4,912,604	70	4	164,517	2,466,424	4,738
Company Specific Programs ⁽²⁾	\$ 451,834	-	-			10,270	37,020	48,000
Total Gas	\$ 10,028,543	346,624	4,912,604	70	4	174,787	2,503,444	52,738
Grand Total	\$ 56,939,727	108,176,677	1,307,681,015	15,613	12,834	258,446	4,210,371	380,432

Notes:

(1) Program budgets shown in this report exclude the performance incentive (PI).

(2) Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.

NHSAVES PROGRAMS
2020 Statewide Goals
Statewide & Company-Specific Programs

Description	Program Budget ⁽¹⁾	kWh Savings		kW Savings		MMBtu Savings		Customers Count
		Annual	Lifetime	Winter kW	Summer kW	Annual	Lifetime	
<u>Electric Utilities</u>								
Statewide Programs	\$ 55,037,784	117,163,305	1,525,295,100	16,265	14,333	116,872	2,416,351	223,215
Municipal Program	\$ 2,000,000	4,114,659	58,335,350	798	319	3,876	58,706	131
All Other Statewide Programs								
Sub-total	\$ 57,037,784	121,277,964	1,583,630,450	17,063	14,652	120,747	2,475,057	223,346
Company Specific Programs ⁽²⁾	\$ 5,542,327	18,900,919	109,618,749	2,319	2,117	-	-	232,068
Total Electric	\$ 62,580,111	140,178,883	1,693,249,199	19,383	16,769	120,747	2,475,057	455,414
<u>Gas Utilities</u>								
Statewide Programs	\$ 10,415,408	377,590	5,409,002	77	5	176,502	2,661,095	5,132
Company Specific Programs ⁽²⁾	\$ 486,809	-	-			10,670	38,110	48,000
Total Gas	\$ 10,902,216	377,590	5,409,002	77	5	187,172	2,699,205	53,132
Grand Total	\$ 73,482,326	140,556,474	1,698,658,201	19,460	16,774	307,920	5,174,262	508,546

Notes:

(1) Program budgets shown in this report exclude the performance incentive (PI).

(2) Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.

Appendix B

Retail Energy Reduction Partners Program and Large Business Energy Reduction Partners Program

2016 Annual Report

Energy Efficiency Programs Funded Through Energy Efficiency Fund RFP #14-004

Jointly Submitted by New Hampshire's Electric Utilities

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
New Hampshire Electric Cooperative, Inc.
Public Service Company of New Hampshire d/b/a Eversource Energy
Unitil Energy Systems, Inc.

July 7, 2017

NH SAVES

EVERSOURCE

 **Liberty Utilities**

 **NEW HAMPSHIRE
Electric Co-op**

 **Unitil**
energy for life

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I. BACKGROUND

In June 2008, the New Hampshire legislature enacted RSA 125-O:19-28 authorizing New Hampshire's participation in the Regional Greenhouse Gas Initiative (RGGI). RGGI is a cooperative effort by nine Northeast and Mid-Atlantic states to reduce greenhouse gas emissions from the electric power sector through individual CO₂ Budget Trading Programs in each of the participating states. This legislation also created the State's Greenhouse Gas Emissions Reduction Fund (GHGERF), to be funded with the proceeds from the auction sale of the State's CO₂ budget allowances and administered by the New Hampshire Public Utilities Commission (NHPUC).

In June 2012, the New Hampshire legislature enacted HB 1490, a provision of which replaced the GHGERF as of the end of 2012 with the Energy Efficiency Fund (EEF). The law also placed a cap of \$1 for each RGGI CO₂ allowance sale, and directed that any proceeds above the cap be rebated back to customers of the electric distribution utilities. The legislation directed the NHPUC to allocate remaining RGGI revenues to the energy efficiency programs administered by the State's electric distribution utilities beginning in 2013.

Several additional legislative updates were enacted, which set additional requirements on the allocation of RGGI funds remaining after the rebate to customers of the electric distribution utilities. At least 15% of the remaining funds must be allocated to the low-income energy efficiency program administered by the electric distribution utilities, and up to \$2 million must be allocated annually for municipal and local government energy efficiency projects through programs administered by the electric distribution utilities. Any funds remaining after the rebate to customers of the electric distribution utilities, and the low income and municipal energy efficiency program allocations, are allocated to all-fuels, comprehensive energy efficiency programs administered by qualified parties selected through a competitive bid process. The legislation directed the NHPUC's Electric Division to conduct the competitive bid process, and required that each entity receiving funds submit a report annually to the NHPUC on the performance of the energy efficiency programs.

New Hampshire's four electric utilities (Eversource, Liberty Utilities, New Hampshire Electric Cooperative, and Unitil Energy Systems, Inc.) jointly submitted a response to the NHPUC's Request for Proposal RFP #14-004, and were awarded \$1.2 million for the delivery of energy efficiency program services over the three year period 2016 – 2018. This is the first of three annual reports which will be issued by the electric utilities. As required by the legislation, the NHPUC reviewed the format and content of this annual report which covers the period January - December 2016.

II. DESCRIPTION OF PROGRAMS

The **Retail Energy Reduction Partners Program** and the **Large Business Energy Reduction Partners Program** leverage the success of the NHSaves Energy Efficiency Programs administered by New Hampshire's electric distribution utilities ("NH Electric Utilities") by expanding the energy efficiency services available to retail businesses and large business energy users to include technical assistance and financial incentives for cost-effective energy efficiency measures that primarily reduce oil and propane usage in existing buildings.

The new services, when combined with the existing services offered under the NHSaves energy efficiency programs, allow the NH Electric Utilities to seamlessly and cost-effectively offer comprehensive, whole building energy efficiency services to retail businesses and large business energy users interested in pursuing energy efficiency projects regardless of the fuel-type utilized for space, water, or process heating. The services offered under these programs include financial incentives for technical assistance, building air sealing and weatherization services, cooking equipment, process equipment, custom measures and upgrades of existing oil and propane heating and hot water systems to efficient systems. These services complement the existing electric and natural gas services currently offered under the NHSaves energy efficiency programs, which primarily include lighting, HVAC, refrigeration, compressed air and motor upgrades, custom measures and technical assistance associated with these measures.

The NH Electric Utilities utilize the existing program delivery infrastructure, and have educated its contractor network to deliver a suite of energy efficiency services, including fuel neutral services, to retail and large business customers and members. Differing levels of technical assistance are available in order to support a comprehensive, whole building view at a level appropriate for the particular customer. Technical assistance includes: 1) Walk-through audits which result in an inventory of recommended energy efficiency measures (the initiation of an energy plan); 2) Focused technology assessments by measure, which result in estimates of energy and cost savings, measure installation costs and payback; and 3) American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Level 2 or 3 audits which typically result in comprehensive and more detailed assessments of energy savings, installation costs and payback.

In order to limit confusion in the market, incentive structures for both programs are similar to the incentive structures of the NHSaves Large and Small Business Energy Solutions Programs. Customers pay the costs not covered by the incentives.

III. PROGRAM ACHIEVEMENTS

Contractor Outreach / Building Customer Awareness

In early 2016, the NH Electric Utilities contacted weatherization contractors currently supporting the Home Performance with ENERGY STAR program about the possibility of expanding their focus and services into the commercial weatherization market. Several of the contractors had an interest and began marketing their weatherization services to the retail and large commercial customer sectors in 2016. In addition, the NH Electric Utilities' direct-install contractor network, previously focused on walk-through lighting audits of commercial facilities, expanded their focus to include a comprehensive view of the entire building envelope and heating and cooling systems during their walk-through audits. Also, the NH Electric Utilities' internal program implementation and account executive teams' focused on meeting the energy needs of the utilities' commercial and industrial customers, expanded their energy efficiency focus to include a similar comprehensive view to energy efficiency projects being contemplated and discussed with the customers they support.

As a result of this outreach effort, the NH Electric Utilities have developed a suitable pipeline of customer energy efficiency projects commensurate with the level of program funding available, and estimate that program funds will be expended by mid-year 2018. This will allow ample time to conduct an evaluation of the programs, including final program cost-effectiveness.

2016 Program Achievements

- 144 customer projects/audits completed – 119 in the retail sector and 25 in the large business sector.
- Customer cost savings of \$2.4 million over the life of the energy efficiency measures installed which can be reinvested in the New Hampshire economy¹.
- Leveraged an additional \$277,534 in customer investment in the audits and energy efficiency projects.
- Energy savings which result in a reduction of 6,154 metric tons of greenhouse gas emissions.

2016 Key Highlights	
Lifetime MMBtu Savings	88,135
Annual MMBtu Savings	8,458
Program Expenditures	\$253,217
Program Cost per Lifetime MMBtu Savings	\$2.87
Program Expenditures Spent on Customer Project Installation/Audit Costs	\$231,044
% of Program Expenditures Spent on Customer Project Installation/Audit Costs	91%
Customer Investment in Project Installation/Audit Costs	\$280,076
Total Project Installation/Audit Costs (Program + Customer investment)	\$511,120

Other ancillary benefits include:

- Technical assistance audits offered through these programs help to transform the market in New Hampshire by educating customers on the value and benefits derived through energy efficiency, while improving the experience and expertise of contractors working with customers to identify energy savings associated with all fuels.
- Support for the market of contractors in New Hampshire to perform energy efficiency services for all fuels in the commercial/industrial sector.
- Increase in property value, lower operating expenses, greater occupant comfort and satisfaction, and improvement in air quality through emissions reduction.

¹ Estimated based on fuel price information from the NH Office of Energy and Planning (10-year average fuel prices effective in July of each year for the period 2007-2016) applied to the lifetime savings of the installed energy efficiency measures.
[(454,250 kwhs x \$0.14) + (261,826 gallons of oil x \$3.03) + (557,664 gallons of propane x \$2.86) = \$2,451,846]

IV. CUSTOMER HIGHLIGHTS

Contemporary Chrysler

Contemporary Chrysler is an automobile dealership based in the Nashua, New Hampshire area. During the planning phase of building a new dealership, the company sought guidance from their electric utility to include energy efficiency enhancements in their construction planning and execution. Typically, new construction buildings meet minimum efficiency building codes, but by emphasizing the benefits of exceeding the minimum codes, the utilities were able to influence Contemporary Chrysler to install measures to surpass the energy codes. A comprehensive suite of energy efficiency measures were installed by combining the incentive funds available through the Large Business Energy Reduction Partners program for the insulation-related measures and through the NHSaves programs for the lighting-related measures. Specifically, the utility team worked with the architect to include plans for interior and exterior LED lighting and higher R-value insulation for the building roof, walls and floors. When the project is complete, over 327,000 kilowatt-hours and 1,308 gallons of propane will be saved annually². Although still under construction, the dealership is planning to open for business in the Fall of 2017.

Cross Roads Plaza

The Cross Roads Plaza in Londonderry recently completed an energy efficiency project under the Retail Energy Partners program that resulted in savings of 10,572 gallons of propane annually (20% of their annual propane usage). This project was initiated through a property manager at Colliers International who recommended the Cross Roads Plaza for consideration for efficiency upgrades. The property manager, building owner and tenants agreed to a walk-through audit at the plaza, which allowed the Retail Energy Reduction Partners program team to assess the existing fuel usage requirements and potential for energy efficiency improvements.



Several energy efficiency contractors submitted proposals for air sealing and insulation of the 24,000 square foot facility. These proposals were utilized by the program team to model the energy savings and resulting benefits for the building owner and the tenants. Typically, tenant-occupied spaces present challenges due to the number of parties involved. This retail project was successful for several reasons. First, the technical assistance, energy savings modeling, and turn-key service offered through the customer's electric utility provided the information and services needed for the building owner and tenants to make an informed decision.

Second, a clause in the tenants' leases allowed the building owner to increase rent for energy efficiency investments; therefore the building owner was willing to make the investment. Third, the building owner recognized the long term benefit and value that this energy efficiency investment would add to his building and the tenants recognized the immediate comfort improvements and lower utility bills that would result. Lastly, a program incentive of \$52,000 helped offset the cost of the energy efficiency investment and reduce the project payback period.

² LED lighting services were funded through the NHSaves program, and weatherization services were funded through the Energy Efficiency Fund RFP #14-004.

RGGI Grant Award (RFP #14-004)
Retail and Large Business Energy Reduction Partners Programs
Program Results
January 2016 - December 2016

Description		2016			2017			2018			Total		
		Retail	Large Business	Sub-Total	Retail	Large Business	Sub-Total	Retail	Large Business	Sub-Total	Retail	Large Business	Total
Program Expenses	Budget	\$ 223,256	\$ 148,837	\$ 372,093	\$ 223,256	\$ 148,837	\$ 372,093	\$ 223,256	\$ 148,837	\$ 372,093	\$ 669,768	\$ 446,511	\$ 1,116,279
	Actual	\$ 134,202	\$ 119,015	\$ 253,217	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 134,202	\$ 119,015	\$ 253,217
	Percent	60%	80%	68%	0%	0%	0%	0%	0%	0%	20%	27%	23%
Total Project Installation Cost	Actual	\$ 304,308	\$ 206,812	\$ 511,120							\$ 304,308	\$ 206,812	\$ 511,120
Customer Portion	Actual	\$ 184,221	\$ 95,855	\$ 280,076							\$ 184,221	\$ 95,855	\$ 280,076
Program Portion	Actual	\$ 120,087	\$ 110,957	\$ 231,044							\$ 120,087	\$ 110,957	\$ 231,044
Program Participation	Goal	196	129	325	195	128	323	194	128	322	585	385	970
	Actual	119	25	144	-	-	-	-	-	-	119	25	144
	Percent	61%	19%	44%	0%	0%	0%	0%	0%	0%	20%	6%	15%
Annual kWh Savings ¹	Goal	485	320	805	482	317	799	479	315	794	1,446	952	2,398
	Actual	7,557	18,134	25,691	-	-	-	-	-	-	7,557	18,134	25,691
	Percent	1558%	5667%	3191%	0%	0%	0%	0%	0%	0%	523%	1905%	1071%
Lifetime kWh Savings ¹	Goal	8,729	5,754	14,483	8,673	5,714	14,387	8,616	5,674	14,290	26,018	17,142	43,160
	Actual	160,890	293,360	454,250	-	-	-	-	-	-	160,890	293,360	454,250
	Percent	1843%	5098%	3136%	0%	0%	0%	0%	0%	0%	618%	1711%	1052%
Annual MMBtu Savings	Goal	3,952	2,513	6,465	3,926	2,496	6,423	3,900	2,479	6,379	11,778	7,488	19,267
	Actual	2,210	6,248	8,458	-	-	-	-	-	-	2,210	6,248	8,458
	Percent	56%	249%	131%	0%	0%	0%	0%	0%	0%	19%	83%	44%
Lifetime MMBtu Savings	Goal	38,916	23,825	62,741	38,668	23,662	62,330	38,412	23,495	61,907	115,996	70,982	186,978
	Actual	43,862	44,274	88,135	-	-	-	-	-	-	43,862	44,274	88,135
	Percent	113%	186%	140%	0%	0%	0%	0%	0%	0%	38%	62%	47%
Annual CO2 Reductions (in Metric Tons)	Actual	148	441	588	-	-	-	-	-	-	148	441	588
Lifetime CO2 Reductions (in Metric Tons)	Actual	2,914	3,241	6,154	-	-	-	-	-	-	2,914	3,241	6,154

(1) Actual savings are the result of controls technology added to HVAC units, which resulted primarily in oil/propane heating savings, but also resulted in electric air conditioning savings.

Attachment B
RGGI Grant Award (RFP #14-004)
Retail and Large Business Energy Reduction Partners Programs
Program Results
January 2016 - December 2016

CO₂ Emissions Reductions by Fuel Source

Description	Units	CO2 Emission Factors In lbs Per Unit ¹	CO2 Emission Factors In Metric Tons Per Unit ³	Energy Savings	Estimated CO2 Emissions Reductions in Metric Tons
<u>Annual</u>					
Electricity ²	MWH	1,087.000	0.4931	26	13
Natural Gas	MMBtu	117.080	0.0531	-	-
Distillate Fuel Oil (#1, #2 & #4)	MMBtu	161.386	0.0732	4,173	305
Residual Fuel Oil (#5 & #6)	MMBtu	173.906	0.0789	-	-
Kerosene	MMBtu	159.535	0.0724	-	-
Propane	MMBtu	139.178	0.0631	4,285	270
Wood	MMBtu	-	-	-	-
Wood Pellet		-	-	-	-
Other	MMBtu	-	-	-	-
Total Annual MWH				26	
Total Annual MMBtu				8,458	
Total Annual Emissions Reductions					588
<u>Lifetime</u>					
Electricity ²	MWH	1,087.000	0.4931	454	224
Natural Gas	MMBtu	117.080	0.0531	-	-
Distillate Fuel Oil (#1, #2 & #4)	MMBtu	161.386	0.0732	36,551	2,676
Residual Fuel Oil (#5 & #6)	MMBtu	173.906	0.0789	-	-
Kerosene	MMBtu	159.535	0.0724	-	-
Propane	MMBtu	139.178	0.0631	51,584	3,255
Wood	MMBtu	-	-	-	-
Wood Pellet		-	-	-	-
Other		-	-	-	-
Total Lifetime MWH				454	
Total Lifetime MMBtu				88,135	
Total Lifetime Emissions Reductions					6,154

Notes:

- (1) Source of CO2 Emission Factors in lbs/unit for all other fuels: http://www.eia.gov/electricity/annual/html/epa_a_03.html
- (2) Source of CO2 Emission Factors in lbs/unit for electricity: Based on 2009 Greenhouse Gas Emissions Reduction Fund Grant Guidelines for CO₂ emission conversion factor for electrically powered equipment.
- (3) Calculated by multiplying the CO2 Emission Factors displayed in lbs/unit by 0.000453592 to convert to metric tons (1 lb = .000453592 metric tons)

Appendix C

EAP Municipal Report October 2016 through August 2017

Distribution of household (HH) income data is not shown where 10 or fewer recipients in town

	<75% FPG	76- 100% FPG	101- 125% FPG	126- 150% FPG	151- 175% FPG	176- 200% FPG	Total	Benefits	Average
Acworth	4	5	6	6	6	7	34	\$ 15,282.71	\$ 449.49
Albany	7	8	8	6	5	4	38	\$ 20,787.56	\$ 547.04
Alexandria	9	14	11	8	4	4	50	\$ 22,252.21	\$ 445.04
Allenstown	25	33	33	34	29	30	184	\$ 89,447.08	\$ 486.13
Alstead	8	15	10	8	9	10	60	\$ 21,036.34	\$ 350.61
Alton	9	15	16	14	10	23	87	\$ 37,329.18	\$ 429.07
Amherst	9	9	10	14	6	16	64	\$ 27,025.25	\$ 422.27
Andover	7	2	9	4	10	8	40	\$ 16,627.81	\$ 415.70
Antrim	12	11	10	10	10	17	70	\$ 30,176.41	\$ 431.09
Ashland	2	2	3	1	4	3	15	\$ 8,804.62	\$ 586.97
Atkinson	4	3	6	3	4	10	30	\$ 6,230.93	\$ 207.70
Auburn	5	9	10	5	7	5	41	\$ 19,529.41	\$ 476.33
Barnstead	11	18	15	15	12	17	88	\$ 45,287.08	\$ 514.63
Barrington	27	22	24	23	12	22	130	\$ 53,263.79	\$ 409.72
Bartlett	8	16	13	13	6	7	63	\$ 27,588.40	\$ 437.91
Bath	5	6	7	9	8	5	40	\$ 13,857.42	\$ 346.44
Bedford	15	12	15	14	16	22	94	\$ 38,427.71	\$ 408.81
Belmont	62	58	61	51	51	49	332	\$ 148,701.93	\$ 447.90
Bennington	15	10	8	9	4	9	55	\$ 26,487.15	\$ 481.58
Benton							10	\$ 5,244.50	\$ 524.45
Berlin	142	179	136	111	63	77	708	\$ 292,750.90	\$ 413.49
Bethlehem	7	8	8	23	12	6	64	\$ 24,671.35	\$ 385.49
Boscawen	14	22	19	18	15	20	108	\$ 22,688.32	\$ 210.08
Bow	6	7	9	10	6	12	50	\$ 11,423.93	\$ 228.48
Bradford	5	6	10	5	5	10	41	\$ 16,967.53	\$ 413.84
Brentwood	2	3	1	3	4	4	17	\$ 9,773.44	\$ 574.91
Bridgewater	6	4	7	6	4	3	30	\$ 14,124.40	\$ 470.81
Bristol	27	14	15	13	12	12	93	\$ 52,083.21	\$ 560.03
Brookfield							10	\$ 5,592.26	\$ 559.23
Brookline	8	4	5	4	9	9	39	\$ 16,388.26	\$ 420.21
Campton	16	29	23	21	14	9	112	\$ 49,809.20	\$ 444.73
Canaan	9	11	9	12	11	15	67	\$ 24,320.75	\$ 363.00
Candia	6	8	9	11	8	12	54	\$ 22,898.21	\$ 424.04
Canterbury	1	1	6	3	2	6	19	\$ 4,206.53	\$ 221.40
Carroll	2	3	3	2	4	3	17	\$ 6,489.88	\$ 381.76

EAP Municipal Report October 2016 through August 2017

Distribution of household (HH) income data is not shown where 10 or fewer recipients in town

	<75% FPG	76- 100% FPG	101- 125% FPG	126- 150% FPG	151- 175% FPG	176- 200% FPG	Total	Benefits	Average
Center Harbor	2	4	4	5	3	4	22	\$ 9,356.11	\$ 425.28
Charlestown	45	36	40	43	42	41	247	\$ 85,038.48	\$ 344.29
Chatham							10	\$ 3,722.76	\$ 372.28
Chester	5	1	4	4	3	9	26	\$ 11,762.71	\$ 452.41
Chesterfield	8	9	7	4	8	9	45	\$ 17,079.06	\$ 379.53
Chichester	4	5	3	6	3	4	25	\$ 6,814.65	\$ 272.59
Claremont	145	163	135	96	87	98	724	\$ 300,930.91	\$ 415.65
Clarksville	2	5	2	4	3	3	19	\$ 8,701.59	\$ 457.98
Colebrook	33	48	47	25	25	35	213	\$ 92,426.34	\$ 433.93
Columbia	6	4	6	10	1	2	29	\$ 12,725.80	\$ 438.82
Concord	175	220	197	166	157	180	1,095	\$ 192,523.41	\$ 175.82
Conway	72	88	74	52	57	48	391	\$ 177,480.72	\$ 453.91
Cornish	4	2	3	4	3	3	19	\$ 8,934.04	\$ 470.21
Croydon	2	4	6	2	4	5	23	\$ 7,241.08	\$ 314.83
Dalton	7	12	6	7	7	6	45	\$ 20,683.75	\$ 459.64
Danbury	5	5	7	8	7	6	38	\$ 15,954.70	\$ 419.86
Danville	12	16	11	20	8	14	81	\$ 29,185.49	\$ 360.31
Deerfield	10	11	6	6	9	12	54	\$ 23,633.27	\$ 437.65
Deering	13	11	8	12	11	18	73	\$ 32,562.60	\$ 446.06
Derry	131	152	125	123	82	133	746	\$ 278,039.84	\$ 372.71
Dorchester	3	3	2	1	3	5	17	\$ 7,130.93	\$ 419.47
Dover	152	141	96	69	59	72	589	\$ 239,635.80	\$ 406.85
Dublin	4	3	4	6	3	5	25	\$ 9,369.03	\$ 374.76
Dummer	1	1	2	3	2	4	13	\$ 5,184.01	\$ 398.77
Dunbarton	4	6	4	2	3	5	24	\$ 10,924.84	\$ 455.20
Durham	4	5	1	3	2	6	21	\$ 7,352.63	\$ 350.13
East Kingston							10	\$ 2,689.45	\$ 268.95
Easton							8	\$ 3,138.32	\$ 392.29
Eaton							9	\$ 4,610.03	\$ 512.23
Effingham	9	15	5	5	9	10	53	\$ 27,254.86	\$ 514.24
Enfield	9	11	8	7	6	9	50	\$ 15,853.87	\$ 317.08
Epping	25	27	31	22	22	37	164	\$ 73,975.04	\$ 451.07
Epsom	14	22	14	30	17	16	113	\$ 36,760.73	\$ 325.32
Errol	1	1	2	1	2	5	12	\$ 6,638.54	\$ 553.21
Exeter	55	91	80	65	67	77	435	\$ 86,809.99	\$ 199.56

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	<75% FPG	76- 100% FPG	101- 125% FPG	126- 150% FPG	151- 175% FPG	176- 200% FPG	Total	Benefits	Average
Farmington	50	71	52	48	41	42	304	\$ 136,664.62	\$ 449.55
Fitzwilliam	9	13	14	11	7	15	69	\$ 30,736.12	\$ 445.45
Francestown	5	4	3	3	5	5	25	\$ 10,549.10	\$ 421.96
Franconia	4	4	0	4	6	2	20	\$ 8,028.60	\$ 401.43
Franklin	71	80	76	50	46	60	383	\$ 143,258.08	\$ 374.04
Freedom	2	5	6	7	6	5	31	\$ 12,951.30	\$ 417.78
Fremont	4	4	5	8	7	9	37	\$ 13,218.01	\$ 357.24
Gilford	27	37	38	38	42	34	216	\$ 94,299.86	\$ 436.57
Gilmanton	12	7	10	11	9	10	59	\$ 31,983.81	\$ 542.10
Gilsum	8	8	1	5	4	5	31	\$ 13,577.38	\$ 437.98
Goffstown	29	32	42	55	38	68	264	\$ 96,550.84	\$ 365.72
Gorham	15	20	22	23	19	14	113	\$ 48,761.89	\$ 431.52
Goshen	5	5	8	6	7	15	46	\$ 14,040.44	\$ 305.23
Grafton	13	11	9	7	8	5	53	\$ 27,625.60	\$ 521.24
Grantham	5	7	1	3	3	4	23	\$ 7,397.12	\$ 321.61
Greenfield	4	1	5	7	3	6	26	\$ 10,633.85	\$ 408.99
Greenland	3	2	2	1	3	2	13	\$ 5,947.07	\$ 457.47
Greenville	19	18	22	15	12	11	97	\$ 48,253.11	\$ 497.45
Groton	3	10	5	3	7	10	38	\$ 11,221.56	\$ 295.30
Hampstead	9	10	13	16	10	22	80	\$ 34,063.69	\$ 425.80
Hampton	36	34	32	25	24	27	178	\$ 30,240.10	\$ 169.89
Hampton Falls	4	4	2	3	2	7	22	\$ 3,320.03	\$ 150.91
Hancock	5	5		3	4	5	22	\$ 9,174.03	\$ 417.00
Harrisville	5	3	2	3	3	2	18	\$ 7,340.20	\$ 407.79
Hanover	0	4	2	4	1	3	14	\$ 3,928.93	\$ 280.64
Haverhill	17	11	14	17	9	19	87	\$ 41,876.41	\$ 481.34
Hebron	3	2	2	3	1	0	11	\$ 4,490.75	\$ 408.25
Henniker	14	12	23	13	8	9	79	\$ 31,812.15	\$ 402.69
Hill	2	4	2	6	7	5	26	\$ 12,599.96	\$ 484.61
Hillsborough	52	39	37	35	29	36	228	\$ 103,936.72	\$ 455.86
Hinsdale	22	34	35	42	18	25	176	\$ 81,989.92	\$ 465.85
Holderness	8	5	7	8	5	6	39	\$ 17,803.31	\$ 456.50
Hollis	2	4	1	4	7	10	28	\$ 11,661.75	\$ 416.49
Hooksett	21	46	34	45	29	29	204	\$ 87,214.55	\$ 427.52
Hopkinton	5	17	9	8	12	15	66	\$ 19,624.72	\$ 297.34

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Hudson	63	45	46	55	48	68	325	\$ 150,704.68	\$ 463.71
Jackson							6	\$ 2,525.18	\$ 420.86
Jaffrey	29	32	26	31	21	29	168	\$ 71,643.91	\$ 426.45
Jefferson	3	4	5	4	4	5	25	\$ 9,391.75	\$ 375.67
Keene	131	130	126	111	74	130	702	\$ 259,299.00	\$ 369.37
Kensington	3	1	2	1	3	4	14	\$ 3,589.58	\$ 256.40
Kingston	19	17	11	17	12	22	98	\$ 29,609.81	\$ 302.14
Laconia	133	162	119	88	67	94	663	\$ 271,914.27	\$ 410.13
Lancaster	31	26	25	22	15	21	140	\$ 66,001.58	\$ 471.44
Landaff							7	\$ 3,732.97	\$ 533.28
Langdon	3	4	2	2	1	4	16	\$ 7,076.21	\$ 442.26
Lebanon	39	45	37	36	23	32	212	\$ 76,987.37	\$ 363.15
Lee	9	4	7	10	4	8	42	\$ 21,423.28	\$ 510.08
Lempster	5	7	6	7	5	8	38	\$ 20,900.18	\$ 550.00
Lincoln	10	11	13	12	5	5	56	\$ 24,020.23	\$ 428.93
Lisbon	8	15	16	8	7	4	58	\$ 31,248.17	\$ 538.76
Litchfield	15	9	11	13	8	16	72	\$ 41,192.90	\$ 572.12
Londonderry	38	41	38	44	36	82	279	\$ 130,046.49	\$ 466.12
Loudon	18	16	24	20	16	22	116	\$ 39,863.33	\$ 343.65
Lyman	1	2	3	5	5	1	17	\$ 6,003.19	\$ 353.13
Lyme	4	1	4	3	3	3	18	\$ 5,840.74	\$ 324.49
Lyndeborough	2	1	2	2	3	3	13	\$ 8,515.58	\$ 655.04
Madbury							9	\$ 4,056.39	\$ 450.71
Madison	9	15	7	10	12	6	59	\$ 27,509.71	\$ 466.27
Manchester	1,153	1,004	746	610	470	685	4,668	\$ 1,782,197.03	\$ 381.79
Marlborough	11	15	10	9	5	14	64	\$ 27,155.55	\$ 424.31
Marlow	4	4	5	3	2	4	22	\$ 9,729.44	\$ 442.25
Mason							8	\$ 2,573.57	\$ 321.70
Meredith	46	46	34	22	27	29	204	\$ 102,327.13	\$ 501.60
Merrimack	24	26	27	38	27	58	200	\$ 82,179.75	\$ 410.90
Middleton	9	5	7	5	4	6	36	\$ 18,758.15	\$ 521.06
Milan	9	13	9	12	8	12	63	\$ 24,319.81	\$ 386.03
Milford	34	39	32	39	43	77	264	\$ 100,639.61	\$ 381.21
Milton	26	33	38	25	18	30	170	\$ 68,574.66	\$ 403.38
Monroe							10	\$ 5,855.13	\$ 585.51

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Mont Vernon	2	1	2	3	1	6	15	\$ 10,229.04	\$ 681.94
Moultonborough	14	7	14	10	7	12	64	\$ 27,583.34	\$ 430.99
Nashua	589	566	401	347	264	370	2,537	\$ 1,076,617.53	\$ 424.37
Nelson	2	5	6	4	0	1	18	\$ 8,385.36	\$ 465.85
New Boston	7	5	12	7	2	15	48	\$ 22,687.89	\$ 472.66
New Durham	5	6	7	6	5	10	39	\$ 30,758.01	\$ 788.67
New Hampton	14	6	8	7	4	5	44	\$ 25,902.80	\$ 588.70
New Ipswich	15	11	17	11	6	17	77	\$ 37,421.06	\$ 485.99
New London	4	5	4	6	3	2	24	\$ 11,432.25	\$ 476.34
Newbury	7	3	6	6	5	6	33	\$ 13,756.46	\$ 416.86
Newfields							9	\$ 3,021.46	\$ 335.72
Newington							5	\$ 1,409.57	\$ 281.91
Newmarket	28	32	34	29	23	26	172	\$ 77,247.57	\$ 449.11
Newport	92	110	72	58	50	48	430	\$ 198,024.91	\$ 460.52
Newton	10	9	6	5	7	11	48	\$ 14,230.54	\$ 296.47
North Hampton	3	2	9	9	5	11	39	\$ 14,514.67	\$ 372.17
Northfield	15	17	21	15	22	24	114	\$ 52,645.50	\$ 461.80
Northumberland	24	39	37	31	19	12	162	\$ 69,199.14	\$ 427.16
Northwood	13	15	12	11	14	21	86	\$ 38,395.34	\$ 446.46
Nottingham	5	6	8	5	6	9	39	\$ 20,991.08	\$ 538.23
Orange							5	\$ 1,497.03	\$ 299.41
Orford	2	2	3	4	2	5	18	\$ 4,758.63	\$ 264.37
Ossipee	47	52	40	29	25	32	225	\$ 140,530.38	\$ 624.58
Pelham	11	10	21	15	14	22	93	\$ 51,964.00	\$ 558.75
Pembroke	21	37	24	28	20	22	152	\$ 64,346.49	\$ 423.33
Peterborough	33	19	20	23	16	25	136	\$ 52,958.67	\$ 389.40
Piermont							8	\$ 3,460.12	\$ 432.52
Pittsburg	4	8	7	5	5	4	33	\$ 15,470.98	\$ 468.82
Pittsfield	15	22	29	17	12	13	108	\$ 48,877.30	\$ 452.57
Plainfield	3	3	3	4	5	5	23	\$ 6,440.17	\$ 280.01
Plaistow	14	12	14	15	19	22	96	\$ 21,633.17	\$ 225.35
Plymouth	34	38	27	22	24	11	156	\$ 74,669.34	\$ 478.65
Portsmouth	80	84	55	50	41	62	372	\$ 140,557.72	\$ 377.84
Randolph							4	\$ 1,058.78	\$ 264.70
Raymond	51	47	62	63	33	47	303	\$ 137,680.21	\$ 454.39

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Richmond	2	5	3	4	5	5	24	\$ 9,151.58	\$ 381.32
Rindge	9	10	16	19	8	17	79	\$ 42,335.50	\$ 535.89
Rochester	244	312	255	184	137	142	1,274	\$ 511,974.62	\$ 401.86
Rollinsford	9	6	2	9	4	5	35	\$ 10,233.63	\$ 292.39
Roxbury							7	\$ 1,532.17	\$ 218.88
Rumney	5	6	9	5	6	4	35	\$ 19,267.52	\$ 550.50
Rye	5	3	3	2	2	3	18	\$ 7,397.02	\$ 410.95
Salem	56	63	60	61	64	98	402	\$ 133,025.25	\$ 330.91
Salisbury	1	0	1	4	1	5	12	\$ 2,961.01	\$ 246.75
Sanbornton	3	3	6	7	7	12	38	\$ 17,856.01	\$ 469.90
Sandown	7	3	8	12	14	13	57	\$ 27,141.26	\$ 476.16
Sandwich	4	1	5	4	4	6	24	\$ 9,715.21	\$ 404.80
Seabrook	58	72	76	64	31	78	379	\$ 86,179.85	\$ 227.39
Sharon							3	\$ 570.47	\$ 190.16
Shelburne							7	\$ 3,282.55	\$ 468.94
Somersworth	96	85	73	62	55	63	434	\$ 168,196.50	\$ 387.55
South Hampton							8	\$ 1,487.02	\$ 185.88
Springfield	4	3	3	4	5	3	22	\$ 11,033.47	\$ 501.52
Stark	6	5	7	4	5	7	34	\$ 11,803.30	\$ 347.16
Stewartstown	11	11	12	15	5	4	58	\$ 22,736.70	\$ 392.01
Stoddard	3	7	6	6	5	3	30	\$ 12,265.76	\$ 408.86
Strafford	4	4	2	5	7	9	31	\$ 12,745.74	\$ 411.15
Stratford	20	22	16	10	11	11	90	\$ 38,440.45	\$ 427.12
Stratham	7	6	8	4	6	4	35	\$ 5,658.86	\$ 161.68
Sugar Hill	3	1	2	2	1	2	11	\$ 4,669.71	\$ 424.52
Sullivan	5	1	9	4	1	4	24	\$ 8,627.14	\$ 359.46
Sunapee	10	8	8	11	4	2	43	\$ 20,547.52	\$ 477.85
Surry	5	2	2	7	5	2	23	\$ 7,219.54	\$ 313.89
Sutton	5	5	4	5	2	4	25	\$ 11,274.91	\$ 451.00
Swanzey	34	55	47	39	27	60	262	\$ 102,156.97	\$ 389.91
Tamworth	17	34	23	28	16	20	138	\$ 59,936.56	\$ 434.32
Temple	6	3	2	5	8	11	35	\$ 13,349.85	\$ 381.42
Thornton	11	18	14	8	9	14	74	\$ 29,768.77	\$ 402.28
Tilton	18	31	29	15	18	23	134	\$ 51,617.50	\$ 385.21
Troy	22	27	14	9	16	13	101	\$ 51,496.96	\$ 509.87

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Tuftonboro	4	11	9	12	10	11	57	\$ 22,610.77	\$ 396.68
Unity	6	7	11	3	8	7	42	\$ 17,038.72	\$ 405.68
Wakefield	20	35	27	29	12	18	141	\$ 69,557.64	\$ 493.32
Walpole	9	15	9	6	7	13	59	\$ 18,027.33	\$ 305.55
Warner	11	9	8	13	9	8	58	\$ 29,637.99	\$ 511.00
Warren	6	8	6	7	8	5	40	\$ 19,937.72	\$ 498.44
Washington	4	4	1	5	5	9	28	\$ 15,790.97	\$ 563.96
Weare	24	22	21	22	12	30	131	\$ 60,905.23	\$ 464.93
Webster	2	2	1	0	1	5	11	\$ 5,579.52	\$ 507.23
Wentworth	3	2	3	4	3	5	20	\$ 12,978.78	\$ 648.94
Westmoreland	6	2	2	3	1	2	16	\$ 10,297.47	\$ 643.59
Whitefield	17	16	17	16	12	16	94	\$ 42,512.62	\$ 452.26
Wilmot	7	3	2	3	1	5	21	\$ 13,752.09	\$ 654.86
Wilton	9	12	11	9	9	12	62	\$ 27,325.85	\$ 440.74
Winchester	69	67	53	41	38	49	317	\$ 154,514.33	\$ 487.43
Windham	11	6	8	7	5	17	54	\$ 23,891.08	\$ 442.43
Windsor	1	1	0	3	3	4	12	\$ 3,988.59	\$ 332.38
Woodstock	11	6	5	6	8	6	42	\$ 24,015.72	\$ 571.80
Totals	5,949	6,271	5,374	4,785	3,834	5,143	31,356	\$12,544,258.76	\$ 400.06