

# **Final Report**

## **Small Business Energy/Sustainability Assessment Pilot Program**

**Prepared for**

**The City of Worcester, Massachusetts**



**WORCESTER**  
A GREENER FUTURE, TODAY

**Prepared By:**



**GDS Associates, Inc.**

Engineers and Consultants

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## EXECUTIVE SUMMARY

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GDS Associates, on behalf of the City of Worcester, developed and delivered energy and sustainability assessment reports for 25 Worcester small businesses as part of the City's Energy Efficiency and Conservation Block Grant (EECBG) award. These reports included detailed and actionable recommendations for improved energy efficiency and sustainability. Six months after delivery of these assessment reports, follow-up calls were made to the business owners to assess which measures, if any, had been implemented.

A primary goal of this project was to understand the factors that motivate small business owners to install cost effective energy efficiency and sustainability measures, or conversely to understand the barriers that prevent them from moving ahead with projects. The City of Worcester is interested in utilizing information gained from this project to evaluate the feasibility of continued programs targeting small business in the future.

Identified and implemented savings data for all 25 businesses is presented in the Appendix sections of this report along with the facility specific post assessment follow-up surveys. Review of this information provides insight into the most common and cost effective types of energy efficiency improvements in Worcester's small business sector as well as the types of measures most likely to be implemented.

Sustainability was also a key focus of this effort. Pre-audit surveys were conducted to baseline owner's perceptions regarding sustainability and a number of actionable recommendations were made to inform each business how they could incorporate sustainable business practices. The follow up surveys were used to assess the rate at which owners adopted these recommended practices and to identify the key barriers to implementation.

Overall, the program was successful in that a significant amount of cost effective energy, water, and sustainability improvements were identified for the owners. However, as of the 6-month follow up surveys, only a small percentage of projects had actually been implemented. The vast majority of implemented projects were those completed through the customer's utility company that provided turnkey installation services and on-bill financing so there were no out of pocket costs. Lack of capital and time to invest in energy efficiency were cited as two of the principle barriers to project implementation. One of the customers mentioned in his follow-up survey, *"Upfront costs are a big concern at the moment, although I would consider the on-bill financing program"*. Additional key findings are outlined below:

- The detailed facility level information, financial analysis, rebate eligibility, and next steps to implementation that was provided as part of the investment grade audits was generally well received and understood by customers, but did not lead to a higher proportion of measures being installed compared with lower cost higher level audits.
- Owners did not have the time or inclination to absorb and act upon the recommendations in the report. This is reflected in the high proportion of turnkey lighting projects completed and the relative lack of more complicated projects. A continued relationship beyond delivery of the audit report through measure implementation would be a value-add service to small business owners that would likely improve implementation rates.
- In some cases, a lack of participant engagement was a barrier to measure implementation. This lack of engagement can be partially attributed to the "free" nature of the audit and the marketing approach. Under this design, owners had nothing to lose by participating.
- Many participants verbally expressed support for sustainable practices and believed being sustainable was important; however when presented with specific ways their business could be more sustainable they chose not to follow through with implementation. While it is possible that

more implementation will occur over the coming months, especially after it can be budgeted into their yearly expenses, it is clear based on participant feedback that further support through the implementation process could have increased implementation rates. According to one business owner, *“There was value to the discussion of sustainability in the report, and an understanding of the related practices is good, but reality is different; operation is key, which some of these measures affect, and have gotten a bad rap by talking to others in the business.”*

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## OVERVIEW OF ACTIVITIES

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The development of 25 energy and sustainability assessments for Worcester small business required extensive collaboration between the City of Worcester, GDS and several other contributors including Prism Energy Services, National Resources Management, NSTAR, National Grid, equipment vendors, installers and most importantly, the business owners. This section presents an overview of activities and outcomes witnessed during the development of these assessment reports that may help inform future program design and delivery by the Worcester Energy Program.

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### PRE-AUDIT

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Pre-audit activities included the procurement of historical utility records from National Grid and NSTAR, Scheduling of site visits and completion of a sustainability survey on site with the business owner.

#### **Utility Records**

Applicants were originally asked to submit two years of historical energy records with their application however this was quickly identified as a major barrier for small business and it was replaced with a utility release form the owner could sign. Both utility companies required the signed application from the business owner with the record release consent form. Obtaining these records typically took anywhere from 1 to 2 weeks. Often, these records were not received until after the site visit had been completed. If anomalies such as large usage spikes or drops were observed when these records were eventually received, post site visit phone calls were required to identify the reason for these anomalies.

While the signed release form was simpler for the business owners, it required additional staff time to coordinate with the utility company. Such coordination should be considered in any future programs, or if Worcester intends to conduct post implementation analysis of energy savings.

#### **Scheduling**

Scheduling of site visits was done over the phone by GDS. After a site visit was scheduled, an e-mail was sent to National Grid's vendor, Prism Energy Services with the details of the site visit such as business name, facility address, facility contact and name. The original intent was to coordinate site visits between GDS and Prism to minimize disruption to the business owner.

In practice, it was difficult to coordinate the site visits and in most cases the GDS site visit was conducted separately from Prism's. One contributing factor was that the Prism audits were primarily lighting focused and could be completed in an hour or less meaning their auditor could complete 6 or more in a day. GDS' site visits were more comprehensive and typically lasted around 4 hours meaning that a maximum of 2 facilities could be scheduled in a single day. Since Prism and GDS both strove to maximize efficiency by scheduling as many audits as possible on a single day, the time disparity on site made it nearly impossible to coordinate schedules for more than 1 site per day.

Despite the team's initial concerns of placing an increased time burden on business owners from multiple site visits, there were no customer complaints regarding this issue.

#### **Sustainability Survey**

On the day of site visits, the first task was to work with the customer on completing a questionnaire that addressed customer motivations for participating in the pilot and their interest and understanding of sustainability. *100% of participating business indicated that saving money was their primary interest in participating in the pilot.* On the idea of implementing sustainability measures that result in either a neutral or positive economic impact on the business, the majority of participants indicated that they

would be somewhat likely to proceed but unlikely to proceed with measures that resulted in an increased cost of 5% or more.

55% of participants indicated that they do not recycle waste generated at their facility. The primary reason given was that single stream recycling is not available through their waste management company. This would require the business to pay for a recycling dumpster separate from the trash dumpster. The three major waste management companies in Worcester are E.L. Harvey, A.J. Letourneau and Waste Management. While exploring alternative recycling options for customer, it was learned that there is no drop-off recycling center in the city of Worcester so a great deal of recyclable material is simply disposed of with the trash. The complete results from the pre-pilot sustainability surveys are in Appendix A of this report.

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## AUDIT REPORTS

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Individual ASHRAE Level III energy and sustainability assessment reports were developed for each of the 25 small businesses. These reports included detailed energy usage evaluation, energy conservation measure (ECM) analysis, water usage, and water conservation measure (WCM) evaluation, an eco-friendly purchasing strategy and waste management evaluation, and an assessment of renewable and distributed energy system measures when simple payback was believed to be relatively short. A thorough evaluation and list of all available utility incentives, state and federal incentives, and leveraged financing opportunities were also presented. The assessment reports were streamlined compared to similar energy audit reports to incorporate only information that would be viewed by a small business as beneficial towards their understanding of the cost effectiveness of installing energy and water savings measures, and how waste, purchasing and other sustainability considerations have an impact on the environment. A summary table was provided in the executive summary section of each report which presented a detailed financial summary of all recommended measures. Technical calculations and other details were provided in the appendix sections so that the customer would not be overwhelmed with the technical aspects of the report.

Existing building systems were summarized in each report along with an analysis of historical energy use, utility rates, and energy benchmarking results. The sections were designed to be concise and have only the minimum narrative needed to discuss what is in the customers businesses in terms of energy usage, yet owners did have a difficult time finding specific benefits to this section of the report towards implementation. The time to develop and format these detailed summaries does have a time and cost impact that should be considered from a future program development standpoint if this level of detail did not in fact have a large bearing on implementation rates.

Each recommended improvement included narrative discussion of the recommendation, detailed economic analysis including return on investment, net present value and utility rebate eligibility. Costs were developed using actual contractor quotes wherever possible and supplement using and RSMMeans™ Cost Data and prior project experience. Specific actionable next steps for implementation were provided for each measure including names and contact information for local vendors where applicable. Sustainability solutions were analyzed qualitatively, and a Sustainability Action Plan was established as an ongoing goal for each business.

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## OWNER REACTIONS TO AUDIT

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Approximately two weeks after delivery of reports to business owners, customers were called to review the report findings and discuss any questions they might have. This follow up also provided an early indication as to which measures, if any, the business was interested in moving forward with. Most customers contacted had not had a chance to thoroughly review the report two weeks after delivery. For these customers, the follow up call was used to emphasize which measures identified would be

most beneficial to the business. One of the customers responded as a comment that the report was *“very good, I have no questions because we have been really busy. Hopefully we will install some things but not much capital is available at this time.”*

Several customers who had reviewed the reports prior to the follow up call indicated an interest to move forward with the lighting and refrigeration measures. This was to be expected as lighting and refrigeration are the most cost effective types of measures with rich utility incentives and no up-front costs due to on-bill financing. These measures also required the least amount of effort to implement on the part of the business. Turnkey installation was offered through the Utility partner companies, Prism Energy Services and National Resources Management. For the measures that were more expensive or complicated to implement, customers generally acknowledged that if they were to implement these types of measure, it would be at least 6 months in the future. The majority of customers were happy with the quality of the report and the level of detail. A few customers said the report provided too much information and that they did not understand some of the technical information provided.

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#### 4-6 MONTH FOLLOW-UP SUMMARY

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Beginning in late September and continuing through October, follow up surveys were administered to the pilot participants. The goal of the surveys was to identify which, if any, recommended measures had been implemented and to gauge the participants overall satisfaction with the pilot. The survey contained 15 questions and took between 10 to 20 minutes to administer over the phone. Initial attempts were made to schedule a good time with the business to conduct the phone survey however most business did not respond to e-mail requests for this arrangement. As a result, the majority of completed surveys were completed as cold calls to the business owner.

A full description of implemented measures is provided later in this report in addition to the raw surveys which are included in Appendix A. Of the 25 participating businesses, 3 were non responsive to multiple attempts to complete the post assessment follow up surveys. For these customers, GDS worked with the Utility partners and installers to verify if the business had reached out to them to move forward with implementation of any of the recommended measures. None of the utility partners or installers associated with these three businesses had been contacted to discuss measure implementation. The presence of non-responsive participants is indicative of a general lack of engagement by some businesses which is discussed in the key findings section of this report.

All of the business participants that completed the follow up survey indicated that they were either satisfied or very satisfied with the pilot and that they would recommend it to another business. Although several of the business did not move forward with actual recommendations in the reports, most recognized the value in the information that was provided and some indicated that there were measures they still intended to consider in the future.

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## SUMMARY OF MEASURES

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This section describes the types of measures identified during the site visits and those measures that were implemented by the customer after delivery of the final assessment report. This section also describes the process of coordinating measure identification and development on site with the utility partners.

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### IDENTIFIED MEASURES

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Services provided by GDS included the scheduling of site visits, in-field data collection for each facility, on-site metering where required, identification of energy efficiency measures, savings analysis, energy benchmarking, procurement of vendor quotes, identification of available incentives, identification of water efficiency measures, development of sustainability recommendations and finally report writing and delivery.

Prism Energy Services was responsible for the identification of lighting efficiency measures and low cost natural gas measures such as sink aerators, programmable thermostats and boiler reset controls. If GDS or Prism identified refrigeration efficiency measures on site, National Resources Management (NRM) became involved to provide energy savings and project cost estimates for those measures. Measures developed by Prism and NRM were integrated into the assessment reports prepared by GDS. For these measures, additional life cycle cost analysis and greenhouse gas reduction estimates were prepared in the final reports presented to customers.

Beyond lighting and refrigeration, recommended measures included improvements to building envelopes, HVAC equipment and water heating equipment. Where appropriate, solar feasibility studies were prepared for a number of businesses. Fuel switch was a recommendation and measure developed for customers who were currently heating with oil or propane. In addition to energy efficiency measures, water conservation measures were also identified. In some cases, annual cost savings from reduced water usage, exceeded cost savings identified for some energy related measures. The charts below capture data on identified savings. The raw data that supports these charts can be found in Appendix B of this report. Of all the savings Identified through the pilot, Figures 1 and 2 display the percentage break down of those savings by measure type.

Figure 1: % Energy Savings by Measure Type

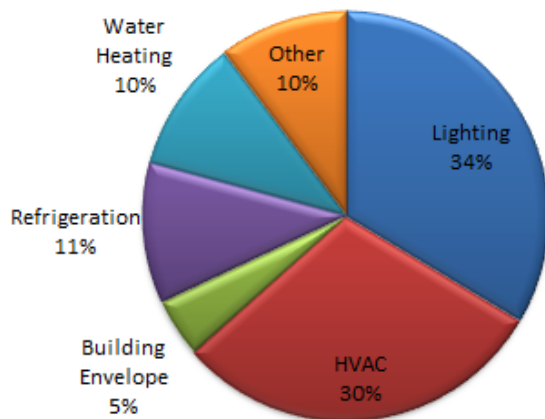
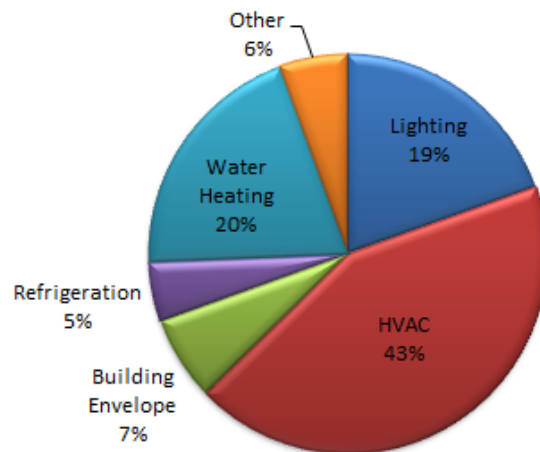
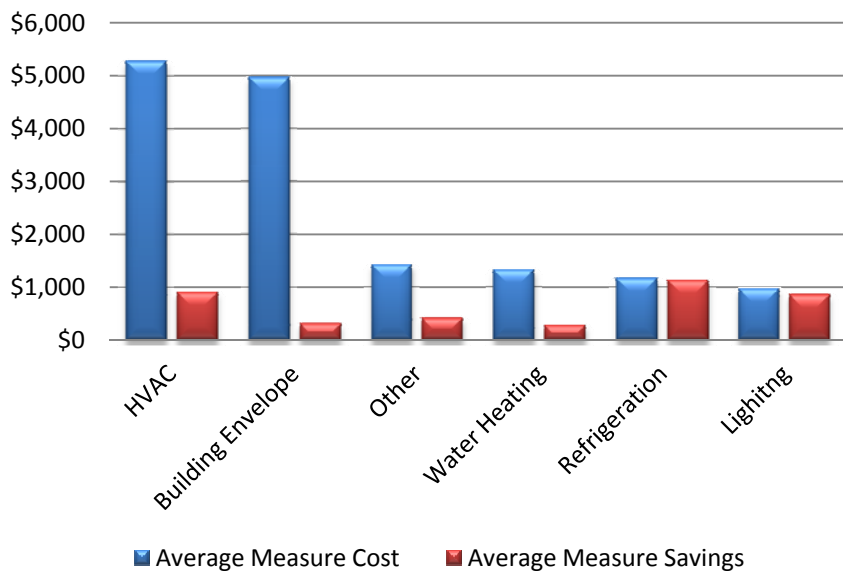


Figure 2: % Total Cost Savings by Measure Type





**Cost Effectiveness of Measure Types**



**Average Simple Payback by measure type after incentive:**

- Building Envelope – 16.0 years
- HVAC – 5.8 years
- Water Heating – 4.8 years
- Other – 3.4 years
- Lighting – 1.0 years
- Refrigeration – 1.1 years

The table above illustrates the relative cost and cost effectiveness of various measure types. Building envelope measures represent the least cost effective types of measures. The average payback for building envelope measures is 16 years.

This table reveals that lighting and refrigeration measures present the most cost effective type of measures with simple paybacks averaging approximately 1 year after incentives. Measures identified in the “other” category include efficiency opportunities associated with plug load control, compressed air, process equipment and retro-commissioning. The data presented in the table above considers average measure cost after incentives. Costs and savings from measures that involved a fuel switch were not included in this table.

**INSTALLED MEASURES**

Four to six months after delivery of the final assessment report, GDS conducted post assessment follow up calls to identify which, if any, measures were implemented. The raw data that supports findings below can be found in Appendix C of this report.

Of the 173 energy conservation measures identified through the assessment process, 17 were implemented within four to six months after delivery of the final report to the business. Of these 17 measures, 14 were measures that were eligible for substantial utility rebates and where on-bill financing options were available. Lighting measures were the most predominant measures implemented followed by the installation of programmable thermostats and refrigeration improvements.

14 out of the 25 participating businesses did not implement any recommendations across all categories of measures including energy, water, sustainability or renewable energy. Of these 14 businesses, four indicated that they intended to install measures that had been recommended in the next 6 to 12 months. Of the 11 businesses that had installed measures, four had indicated that there were additional measures they would like to install in the next 6 to 12 months. The table below shows a comparison between total identified and implemented savings resulting from this pilot.

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	<b>Identified Savings</b>	<b>Implemented Savings</b>	<b>% realized</b>
Electric (kWh)	336,981	59,531	18%
Natural Gas (therm)	9,927	2,849	29%
Oil (gallon)	3,312	0	0%
Propane (gallon)	1,671	0	0%
Energy (MMBtu)	2,759	488.2	18%
Water (gallon)	1,280,845	62,136	5%
Cost (\$)	\$94,638	\$11,232	12%
CO2E (lb)	530,610	100,346	19%

The table above summarizes the results of the pilot in terms of capturing realized energy, cost and greenhouse gas reductions. This table provides a powerful set of data points that may be used to inform future programs. It is worth reiterating that the majority of these realized savings are derived from those measures that received substantial utility financing and a turnkey installation process through the utility partner companies. Costs and the effort required to implement measures are the two most restrictive barriers to implementation. This key finding is discussed in further detail in the following section.

## KEY FINDINGS AND RECOMMENDATIONS

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### CUSTOMER ENGAGEMENT

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After 9 months of interacting with the 25 business participants, it is our perception that for some participants, the lack of engagement was a barrier to measure implementation. Evidence of this issue could be found through all stages of the pilot including difficulty with recruitment, lack of involvement of the business owner during the site visits and difficulty completing the post assessment follow-up surveys. A disengaged customer is less likely to devote the time required to read, comprehend, and act upon recommendations. It is not surprising that the participants who we perceived to be more engaged were most likely to implement measures across energy, water and sustainability.

In the early stages of the pilot, the issue of customer engagement was anticipated by the project team. To address this issue, the original design called for a minimal amount of “buy in” from the applicant to help ensure the selection of an engaged study group. The “buy in” as originally designed was the time and effort required by the business to compile two years of historical utility records as prerequisite to applying to the pilot. The initially slow intake of applications coupled with the short recruitment window eventually rendered this approach unfeasible given the project timeline; therefore the requirement to supply these records was dropped to expedite the recruitment effort.

In many cases, customers were visited by a program representative who described the program and asked if they wanted to participate. The program cost the owner nothing apart from a few minutes to complete the application and they were then eligible to receive a free detailed energy audit. Our belief is that some customers agreed to receive the audit for free without ever truly buying into the value that energy efficiency and sustainability can have to their bottom line.

It is still our belief that requiring some form of participant “buy-in” upfront is an effective strategy to mitigate the potential issues that arise from a disengaged participant. A longer, broader recruitment effort targeting additional local business groups may have drawn interest from a larger group from which the City could have selected applicants.

#### Recommendations:

- **Enhanced Marketing.** The program was effectively marketed through a single business group meeting followed by word of mouth and door to door canvassing. Leveraging the now established Worcester Energy Program brand and focusing more on marketing a future program is recommended to encourage participation.
- **Require participant “buy in”.** One way to limit free-riders (those who will accept the free service but aren’t motivated to proceed with anything) is to require some form of upfront cost or effort required by the interested participant. This can take the form of an upfront cost or co-fund for the audit or the submission of historical utility records. Requiring an upfront contribution by the participant may help screen only serious applicants.
- **Provide Project Management Support.** This support may take the form of technical and logistics support such as phone calls to contractors and utility programs as well as customer-directed meetings and phone calls to maintain engagement and allow businesses time to re-visit

measures. Small business owners are extremely busy and often even good cost effective opportunities will fall victim to the doldrums of everyday business. A resource that can work with the owner after the audit is complete to help move projects ahead would be extremely valuable.

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## REPORT CONTENT

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The audit reports were generally well received as very few customers had feedback towards how they could be improved. Several customers mentioned specifically that they were very professional and were better than other energy audit reports they had seen previously. However, some customers noted there may have been too much, or overly technical information.

In general, the abundance of detailed facility level information while generally well received and understood by customers did not lead to a higher proportion of measures being installed. Rather, the utility funded measures that required no up-front cost and offered a turnkey installation solution (inexpensive and simple to perform) were the most widely implemented, especially the lighting measures. Customers who were proactive were able to implement and install some of the measures in house which saved on labor costs and time. For disengaged customers, it was difficult for them to read through the report completely and some mentioned a preference for more face-to-face time, potentially to discuss the report and help follow-up with recommended measures.

### **Recommendations:**

- ***Project Management Support.*** Based on the feedback from customers, one approach to improve implementation rates would be to reduce the emphasis on the detailed analysis and report presentation and instead shift that effort towards project management support. Project management in this context refers to working more closely with customers from the point of report delivery through measure implementation. Types of support could include meetings to review the recommendations and develop a customized implementation plan, assistance procuring vendor quotes, assistance completing utility rebate applications, and similar activities. We believe that reducing the upfront time and effort spent on the report and analysis and instead focusing on providing this type of support would improve implementation rates.
- ***Lower Level Energy Audit.*** If more emphasis (time, cost) is spent on project management support, there must be a tradeoff on the time and effort spent on the initial energy audit so as not to drastically increase the cost of the effort. One recommendation is to utilize the utility audit reports for as they are prepared with no additional modification. Instead, that time can be spent sitting down with the customer at their location to review the utility audit and go through any questions. With respect to additional measures not covered by the utility programs, we recommend using ASHRAE Level I (scoping) audits to provide a high level description of the opportunities, cost effectiveness, and utility rebate eligibility. The follow up face to face meeting with the customer could be used to further describe the opportunities and assess the customer's interest. Additional support could then be provided to help further develop those opportunities which the customer had the greatest interest in.

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## MEASURE IMPLEMENTATION

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For engaged customers, the primary barriers to implementation of energy efficiency measures are the upfront cost followed closely by the effort required to see a project through to completion. The cost barrier requires very little explanation but can be eased through rebate and/or financing programs. The effort required to see a project through to completion is also a significant hurdle to most customers. The small business community is typically pre-occupied with operating their business on a day to day basis. The effort required to research unfamiliar technologies, coordinate vendor quotes, installation dates and possible disruptions to business often prevent a business from ever moving forward, even if they recognize the cost saving potential and were engaged in the process from the beginning.

This finding is supported by the identification of the measures that were actually implemented. Of all 17 measures implemented as part of this pilot, 14 of them received robust financial incentives through the utility sponsored program which also included a turnkey process for implementation. These measures include interior lighting upgrades, installation of programmable thermostats, improvements to refrigeration equipment in cold storage applications and low flow spray valves and faucet aerators.

### Recommendations:

- **Loan Programs.** Future programs could address the cost barrier by continuing to promote the availability of utility based incentives. An additional consideration would be for the City to institute a revolving loan fund to help fund energy efficiency projects. If this type of fund could be capitalized by the City, loans could be paid out for qualifying improvements to help overcome the initial cost barrier and the fund would be replenished over time through repayment. There are a variety of financing models available through could be studied for feasibility.
- **Rebate Programs.** Targeted rebate programs could be another approach to further incentivize small businesses to make improvements. To help limit the scope and cost of such a program, the City could consider a targeted rebate program that focuses on a specific technology or service such as storm windows, air sealing, or something simple like vending misers or low flow aerators. One of the principle barriers preventing small businesses from recycling was the incremental cost of procuring a recycling dumpster. The City could realize true impact through increased recycling by offering a buy down program to help cover the additional cost of a recycling dumpster.
- **Technical Support.** Maintain a hot line for businesses to call with questions regarding energy efficiency and measure implementation. Individuals receiving the calls should be well versed in current energy efficiency practices, incentive programs, equipment standards and have access to a database of local contractors. This type of on-going support is synergistic with the concept of providing more project management support. One customer mentioned *“for follow-up it could be improved; there may be ways support or encourage changes, following through with businesses more, but without “nagging”. Hand holding through next steps could help some businesses.”*

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## VALUE OF SUSTAINABILITY

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Unless a sustainability measure has the potential to reduce business operating costs and is very easy to implement, businesses are not likely to move forward. Only 7 of the 25 businesses implemented sustainability measures recommended in the report. Typically, a business that implemented a sustainability measure also had implemented energy efficiency measures. Almost all the sustainability measures implemented were low to no cost measures that were very simple to implement and includes things like turning off electronics when not in use and reducing or reusing waste. There seems to be a disconnect between what people say about the importance of sustainability and how they actually behave. Participants may verbally express that they support sustainable practices because they feel that is what they are supposed to say, however the true proof of their beliefs is in the actions, or inactions in these cases.

The evidence that supports these findings was obtained from a survey conducted during the site visit. The full results of this survey can be found in Appendix A of this report. Customers were asked a number of questions regarding sustainability and their motivations for participating in the pilot. 100% of customers indicated that the opportunity to save money was the reason for participation. This being the case, it is not surprising that sustainability measures that would cost the business money would not be implemented. However, the same survey also asked if the business would implement sustainability recommendations if they resulted in a slight increase of operating costs and the majority of businesses indicated that they would.

### **Recommendations:**

- Future Programs should emphasize the non-tangible benefits of promoting oneself as a “sustainable business” as a way to offset and or justify any cost increases associated with implementation of sustainability measures. This emphasis is best communicated in face to face meetings with the customer to review the audit findings and discussing recommendations.
- Leverage certification programs as way to promote sustainability to the business community. Certifications offer a frame work for the business to achieve sustainability goals.
- Address the cost barriers to sustainability for Worcester small business. The prime example is the cost associated with recycling. The majority of businesses do not recycle because they do not want to pay for a second dumpster. Single stream recycling is not available through any of the local waste management companies. The lack of free curb side recycling pick-up by the city for commercial customers and also the lack of a municipal recycling center prevents many businesses from seriously considering recycling.

**APPENDIX A: PRE-PILOT SUSTAINABILITY SURVEY**

The results of the pre-pilot sustainability survey are provided below for each customer:

**Survey Questions:**

1	On a scale of 1-5, where 1 is "no or negative impact", and 5 is "extremely positive impact"; What impact, if any do you believe there would be to your sales if you were to successfully implement and market yourself as a sustainable business?
2	On a scale of 1-5, where 1 is least sustainable, and 5 is most sustainable, How would you rank your business, relative to your competitors, with respect to using sustainable business practices?
3	On a scale of 1-5, where 1 not at all likely and 5 is very likely, how likely do you think you are to implement sustainability recommendations in our report if they result in a neutral cost impact - that is neither more or less expensive than your current practice?
4	Same question but if the sustainability measure has the effect of reducing cost by less than 5%
5	Same question but if the sustainability measure has the effect of slightly increasing cost by less than 5% but would result in considerably lower impact on the environment
6	Which best characterizes customers motivation for program participation? 1 - Opportunity to save money on utilities and/or purchasing costs 2 - Get help understanding short and long term energy and sustainability planning, including available rebate programs 3 - To reduce environmental impact 4 - To become more sustainable business that can be marketed to customers 5 - Other
7	Does your company recycle?

**Survey Answers:**

	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
US Reflector	4	4	4	4	3	1	Yes
Barney's Bicycle	3	4	5	5	4	1	No
A1 Wholesale Windows	3	3	4	4	2	1	Yes
Magay & Barron Eye Center	3	4	4	4	2	1	Yes
The Prints and Potter Gallery	4	4	5	5	1	1	Yes
Le Mirage Café	3	3	2	2	1	1	No
Fords Hometown Services	3	3	3	4	1	1	No
Foley Incorporated	2	3	2	3	1	1	Yes
Callahan&Fay	1	3	2	3	1	1	No
Leo's T Bird Pizza	1	3	3	3	1	1	No
Advantage Benefits	3	3	3	4	1	1	No
LightLab Designs	5	5	3	4	2	1	Yes
Suney's Pub	2	3	3	4	1	1	No
Sneakerama Inc.	3	4	4	4	2	1	No
Harsha Management Co	2	3	4	5	1	1	No
Bowditch & Marinelli	3	4	5	5	4	1	Yes
Davis Advertising	4	4	3	4	2	1	No
Vega Distributors - Greg's Packing	4	4	4	4	3	1	Yes
Mrs Mack's Bakery	5	4	5	5	4	1	Yes
DeBoise Auto Body	2	3	4	5	1	1	Yes
Howard Products						1	
Miller Fence	3	3	3	4	1	1	No
Worcester Fitness						1	
Peppercorns Park Ave	3	3	4	4	2	1	Yes
Dodge Park LLC	4	4	5	5	3	1	No
<b>Average:</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>1</b>	

**APPENDIX B: SUMMARY OF IDENTIFIED SAVINGS**

The table below presents all identified annual energy, water, cost and greenhouse gas reductions for each of the 25 business participants. Data in this table has been sorted by total cost savings per project. The subsequent tables in this appendix also break down the savings by measure type. Through the assessment of 25 small businesses in the City of Worcester, GDS has identified a total of \$94,638 in annual cost savings. If all water conservation measures were to be implemented, municipal water consumption would be reduced by over 1.25 million gallons. Annual greenhouse gas reductions identified are equivalent to the amount of carbon sequestered by 52 acres of forest.

**Total Identified Savings by Project**

Business Name	Facility Size	# of Identified Measures	Total of all Project Costs	Electric Savings (kWh/year)	Gas Savings (therm/year)	Oil Savings (gal/year)	Propane Savings (gal/year)	Energy Savings (MMBtu/year)	Water Savings (gal/year)	Total Cost Savings (\$/year)	Simple Payback
Barney's Bicycle	3,500	5	\$5,299	4,517	487			64.1	2,979	\$908	5.8
A1 Wholesale Windows	15,850	5	\$2,778	3,404	764			88.0	6,625	\$968	2.9
Magay & Barron Eye Center	1,600	9	\$3,181	6,995	63			30.2	1,529	\$1,202	2.6
The Prints and Potter Gallery	3,000	5	\$1,530	8,667	174			47.0	10,585	\$1,252	1.2
Foley Incorporated	10,000	5	\$23,694	8,607	1,449			174.3	1,716	\$2,431	9.7
Callahan&Fay	9,000	4	\$5,046	13,368	18			47.4	22,126	\$2,441	2.1
Leo's T Bird Pizza	2,000	6	\$10,594	13,294	504			95.8	4,426	\$2,443	4.3
Advantage Benefits	6,000	6	\$27,082	18,618	288			92.3	19,847	\$2,565	10.6
LightLab Designs	2,800	7	\$3,657	3,593	452			57.5	5,330	\$2,635	1.4
Suney's Pub	3,000	7	\$18,317	13,793	235			70.6	35,402	\$2,711	6.8
Sneakerama Inc.	2,300	7	\$2,602	17,409	112			70.6	4,139	\$2,946	0.9
Harsha Management Co	7,500	7	\$9,210	16,728	407			97.8	63,669	\$3,512	2.6
Davis Advertising	14,000	6	\$14,779	23,952	465			128.2	44,252	\$3,837	3.9
Vega Distributors - Greg's Packing	8,250	7	\$5,098	24,968				85.2	13,213	\$4,128	1.2
DeBoise Auto Body	5,000	14	\$25,543	19,073	1,814			246.5	5,749	\$5,107	5.0
Miller Fence	3,000	5	\$5,884	939	-1,348		1,671	21.6	6,714	\$6,190	1.0
Worcester Fitness	28,000	10	\$3,485	12,969	1,181			162.4	370,469	\$6,558	0.5
Peppercoms Park Ave	11,500	8	\$13,733	31,768	2,433			351.7	132,386	\$7,277	1.9
Dodge Park LLC	28,000	11	\$24,166	50,645	4,522			625.0	402,263	\$16,782	1.4
Le Mirage Café	2,800	8	\$4,592	1,258	1,007			105.0	65,528	\$1,811	2.5
US Reflector	5,000	3	\$2,388	1,111	313			35.1	2,998	\$362	6.6
Mrs Mack's Bakery	2,976	10	\$10,146	24,421	406			123.9	6,453	\$4,724	2.1
Bowditch & Marinelli	5,000	6	\$17,396	4,083	-1,470	1,023		10.2	2,095	\$3,606	4.8
Fords Hometown Services	7,300	5	\$8,861	7,001	-288	260		31.5	24,709	\$2,102	4.2
Howard Products	14,000	7	\$54,593	5,800	-4,061	2,029		-102.3	25,643	\$6,140	8.9
<b>Total</b>	<b>201,376</b>	<b>173</b>	<b>\$303,654</b>	<b>336,981</b>	<b>9,927</b>	<b>3,312</b>	<b>1,671</b>	<b>2,759</b>	<b>1,280,845</b>	<b>\$94,638</b>	<b>3.2</b>
<b>Average</b>	<b>8,055</b>	<b>7</b>	<b>\$12,146</b>	<b>13,479</b>	<b>414</b>			<b>110</b>	<b>51,234</b>	<b>\$3,786</b>	<b>3.8</b>

Total # of Identified Measures: 173  
 Total of all Project Costs: \$303,654  
 Total Electric Savings: 336,981 kWh  
 Total Gas Savings: 9,927 therms  
 Total Oil Savings: 3,312 gallons  
 Total Propane Savings: 1,671 gallons  
 Total Energy Savings: 2,759 MMBtu  
 Total Water Savings: 1,280,845 gallons  
 Total Cost Savings: \$94,638  
 Total CO<sub>2</sub>E Savings: 530,610 pounds



## Total Identified Savings by Measure Type

Lighting Measures					
Business Name	Energy	Cost Savings	Installed	Simple Payback	CO2
Barney's Bicycle	12.8	\$419	\$1,436	3.4	3,143
A1 Wholesale Windows	4.5	\$146	\$138	0.9	1,098
Magay & Barron Eye Center	17.4	\$754	\$1,067	1.4	4,233
The Prints and Potter Gallery	29.5	\$964	\$620	0.6	7,231
Foley Incorporated	19.8	\$647	\$2,194	3.4	4,853
Callahan&Fay	10.3	\$482	\$929	1.9	2,512
Leo's T Bird Pizza	5.9	\$191	\$269	1.4	1,436
Advantage Benefits	21.0	\$801	\$507	0.6	5,140
LightLab Designs	12.6	\$429	\$478	1.1	3,092
Suney's Pub	4.2	\$199	\$205	1.0	1,501
Sneakerama Inc.	50.2	\$1,637	\$935	0.6	12,284
Harsha Management Co	24.8	\$810	\$940	1.2	6,074
Davis Advertising	65.5	\$2,135	\$2,235	1.0	18,098
Vega Distributors - Greg's Packing	10.7	\$502	\$2,074	4.1	2,704
DeBoise Auto Body	28.5	\$929	\$1,607	1.7	6,967
Miller Fence					
Worcester Fitness	1.5	\$40	\$80	2.0	358
Peppercorns Park Ave	51.2	\$1,639	\$1,328	0.8	12,512
Dodge Park LLC	139.5	\$4,547	\$1,624	0.4	35,115
Le Mirage Café	2.9	\$119	\$197	1.7	1,009
US Reflector	1.9	\$70	\$102	1.5	473
Mrs Mack's Bakery	34.0	\$1,721	\$1,665	1.0	12,013
Bowditch & Marinelli	12.6	\$428	\$616	1.4	3,077
Fords Hometown Services	16.0	\$513	\$1,449	2.8	3,849
Howard Products	4.1	\$173	\$356	2.1	990
<b>Total</b>	<b>581</b>	<b>20,295</b>	<b>\$23,051</b>	<b>38</b>	<b>149,762</b>
<b>Average</b>	<b>24</b>	<b>846</b>	<b>\$960</b>	<b>2</b>	<b>6,240</b>

HVAC Measures					
Business Name	Energy	Cost Savings	Installed	Simple Payback	CO2
Barney's Bicycle	51.2	\$489	\$3,848	7.9	6,324
A1 Wholesale Windows	46.0	\$289	\$1,825	6.3	5,381
Magay & Barron Eye Center	6.0	\$115	\$469	4.1	912
The Prints and Potter Gallery	7.9	\$74	\$575	7.8	924
Foley Incorporated	144.9	\$1,318	\$20,850	15.8	16,950
Callahan&Fay	35.3	\$1,657	\$4,042	2.4	12,485
Leo's T Bird Pizza	64.9	\$1,044	\$8,912	8.5	11,101
Advantage Benefits	34.7	\$488	\$95	0.2	4,816
LightLab Designs	39.4	\$325	\$2,563	7.9	4,481
Suney's Pub	45.1	\$1,324	\$17,050	12.9	11,643
Sneakerama Inc.	16.4	\$298	\$1,450	4.9	2,586

Harsha Management Co	18.8	\$884	\$4,250	4.8	4,609
Davis Advertising					
Vega Distributors - Greg's Packing					
DeBoise Auto Body	168.8	\$1,899	\$14,680	7.7	19,755
Miller Fence	16.8	\$154	\$350	2.3	2,321
Worcester Fitness					
Peppercorns Park Ave	220.8	\$3,042	\$11,608	3.8	32,291
Dodge Park LLC	280.1	\$3,283	\$6,737	2.1	37,455
Le Mirage Café	14.8	\$114	\$700	6.1	1,867
US Reflector					
Mrs Mack's Bakery	15.0	\$760	\$5,100	6.7	5,304
Bowditch & Marinelli					
Fords Hometown Services	45.0	\$319	\$288	0.9	5,353
Howard Products	9.1	\$241	\$95	0.4	1,487
<b>Total</b>	<b>1,281</b>	<b>18,117</b>	<b>\$105,487</b>	<b>113</b>	<b>188,045</b>
<b>Average</b>	<b>64</b>	<b>906</b>	<b>\$5,274</b>	<b>6</b>	<b>9,402</b>

<b>Building Envelope Measures</b>					
<b>Business Name</b>	<b>Energy</b>	<b>Cost Savings</b>	<b>Installed</b>	<b>Simple Payback</b>	<b>CO2</b>
Barney's Bicycle					
A1 Wholesale Windows	36.3	\$420	\$800	1.9	5,009
Magay & Barron Eye Center	4.6	\$102	\$1,216	11.9	754
The Prints and Potter Gallery					
Foley Incorporated					
Callahan&Fay					
Leo's T Bird Pizza					
Advantage Benefits	26.9	\$1,024	\$25,540	24.9	6,570
LightLab Designs	4.8	\$45	\$600	13.3	570
Suney's Pub					
Sneakerama Inc.					
Harsha Management Co					
Davis Advertising	46.5	\$429	\$9,869	23.0	5,441
Vega Distributors - Greg's Packing					
DeBoise Auto Body					
Miller Fence	4.1	\$61	\$2,281	37.4	717
Worcester Fitness					
Peppercorns Park Ave					
Dodge Park LLC					
Le Mirage Café	12.0	\$106	\$914	8.6	1,644
US Reflector	31.3	\$197	\$2,000	10.2	3,662
Mrs Mack's Bakery	37.4	\$409	\$1,400	3.4	4,390
Bowditch & Marinelli					
Fords Hometown Services					

Howard Products					
<b>Total</b>	<b>204</b>	<b>2,793</b>	<b>\$44,620</b>	<b>135</b>	<b>28,757</b>
<b>Average</b>	<b>23</b>	<b>310</b>	<b>\$4,958</b>	<b>15</b>	<b>3,195</b>

<b>Refrigeration Measures</b>					
<b>Business Name</b>	<b>Energy</b>	<b>Cost Savings</b>	<b>Installed</b>	<b>Simple Payback</b>	<b>CO2</b>
Barney's Bicycle					
A1 Wholesale Windows					
Magay & Barron Eye Center					
The Prints and Potter Gallery					
Foley Incorporated					
Callahan&Fay					
Leo's T Bird Pizza	24.1	\$1,132	\$1,383	1.2	5,902
Advantage Benefits					
LightLab Designs	0.6	\$28	\$4	0.1	210
Suney's Pub	11.2	\$526	\$677	1.3	3,960
Sneakerama Inc.					
Harsha Management Co					
Davis Advertising					
Vega Distributors - Greg's Packing	72.5	\$3,403	\$2,809	0.8	17,744
DeBoise Auto Body					
Miller Fence					
Worcester Fitness	3.0	\$81	\$370	4.6	727
Peppercorns Park Ave					
Dodge Park LLC					
Le Mirage Café					
US Reflector					
Mrs Mack's Bakery	31.2	\$1,582	\$1,746	1.1	11,042
Bowditch & Marinelli					
Fords Hometown Services					
Howard Products					
<b>Total</b>	<b>143</b>	<b>6,752</b>	<b>\$6,989</b>	<b>9</b>	<b>39,585</b>
<b>Average</b>	<b>24</b>	<b>1,125</b>	<b>\$1,165</b>	<b>2</b>	<b>6,598</b>

<b>Water Heating</b>					
<b>Business Name</b>	<b>Energy</b>	<b>Cost Savings</b>	<b>Installed</b>	<b>Simple Payback</b>	<b>CO2</b>
Barney's Bicycle	0.5	\$17	\$5	0.3	158
A1 Wholesale Windows	1.2	\$46	\$10	0.2	419
Magay & Barron Eye Center	1.1	\$122	\$427	3.5	931
The Prints and Potter Gallery	9.5	\$88	\$335	3.8	1,114
Foley Incorporated					
Callahan&Fay	1.8	\$15	\$25	1.7	213

# Final Report

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Leo's T Bird Pizza	0.8	\$37	\$10	0.3	276
Advantage Benefits	3.1	\$145	\$20	0.1	1,092
LightLab Designs					
Suney's Pub	4.0	\$34	\$25	0.7	475
Sneakerama Inc.	0.5	\$24	\$7	0.3	182
Harsha Management Co	22.9	\$256	\$530	2.1	2,693
Davis Advertising	3.4	\$158	\$35	0.2	1,191
Vega Distributors - Greg's Packing	0.5	\$23	\$15	0.7	170
DeBoise Auto Body	20.8	\$543	\$1,553	2.9	3,774
Miller Fence	0.8	\$36	\$5	0.1	276
Worcester Fitness	139.2	\$1,354	\$7,931	5.9	17,361
Peppercorns Park Ave	73.1	\$662	\$671	1.0	8,626
Dodge Park LLC	208.8	\$1,815	\$15,804	8.7	24,771
Le Mirage Café	88.4	\$669	\$2,746	4.1	11,262
US Reflector	0.4	\$20	\$10	0.5	153
Mrs Mack's Bakery	3.2	\$27	\$35	1.3	397
Bowditch & Marinelli	0.4	\$19	\$9	0.5	142
Fords Hometown Services	6.8	\$59	\$80	1.4	806
Howard Products	4.2	\$198	\$80	0.4	1,492
<b>Total</b>	<b>595</b>	<b>6,367</b>	<b>\$30,368</b>	<b>41</b>	<b>77,974</b>
<b>Average</b>	<b>26</b>	<b>277</b>	<b>\$1,320</b>	<b>2</b>	<b>3,390</b>

Other					
Business Name	Energy	Cost Savings	Installed	Simple Payback	CO2
Barney's Bicycle					
A1 Wholesale Windows					
Magay & Barron Eye Center					
The Prints and Potter Gallery					
Foley Incorporated	9.4	\$446	\$630	1.4	2,328
Callahan&Fay					
Leo's T Bird Pizza					
Advantage Benefits	6.6	\$252	\$990	3.9	1,615
LightLab Designs					
Suney's Pub	5.9	\$280	\$320	1.1	8,611
Sneakerama Inc.	3.4	\$142	\$200	1.4	838
Harsha Management Co	31.2	\$826	\$3,420	4.1	5,355
Davis Advertising	12.8	\$603	\$2,590	4.3	3,722
Vega Distributors - Greg's Packing	1.4	\$67	\$180	2.7	348
DeBoise Auto Body	28.2	\$1,382	\$7,700	5.6	6,909
Miller Fence					
Worcester Fitness	35.5	\$965	\$1,105	1.1	8,694
Peppercorns Park Ave	6.6	\$158	\$126	0.8	1,614
Dodge Park LLC					

Le Mirage Café					
US Reflector	1.4	\$51	\$270	5.3	348
Mrs Mack's Bakery	3.1	\$155	\$180	1.2	1,080
Bowditch & Marinelli	0.9	\$35	\$180	5.1	232
Fords Hometown Services	8.0	\$368	\$1,398	3.8	1,997
Howard Products	11.3	\$483	\$1,925	4.0	2,796
<b>Total</b>	<b>166</b>	<b>6,213</b>	<b>\$21,214</b>	<b>46</b>	<b>46,487</b>
<b>Average</b>	<b>11</b>	<b>414</b>	<b>\$1,414</b>	<b>3</b>	<b>3,099</b>

Fuel Switch Measures Not included in the above data presentation					
Miller Fence	0.0	\$5,920	\$3,238	0.5	0
Fords Home Town	-9.0	\$574	\$5,827	10.2	0
Bowdwich and Marinelli	-3.8	\$3,104	\$16,600	5.3	0
Howard Products	-133.0	\$4,812	\$52,000	10.8	0

**APPENDIX C: SUMMARY OF IMPLEMENTED SAVINGS**

The table below presents all identified annual energy, water, cost and greenhouse gas reductions implemented by business participants. Of the 25 business participants who received free energy and sustainability assessments through the Worcester Energy Program, 11 businesses (44%) implemented recommended measures within 4-6 months of receiving the report.

Implemented Savings								
Busines Name	# of Implemented Measures	Electric Savings (kWh/year)	Gas Savings (therm/year)	Propane Savings (gal/year)	Energy Savings (MMBtu/year)	Water Savings (gal/year)	Total Cost Savings (\$/year)	CO <sub>2</sub> e Reduction (lb)
Barney's Bicycle	2	3,767	154		28.2		\$604	4,945
A1 Wholesale Windows	2	1,740	304		36.3	2,257	\$443	5,009
Magay & Barron Eye Center	3	3,152	15		12.3	749	\$473	2,798
The Prints and Potter Gallery	1	8,667			29.5		\$964	7,231
Foley Incorporated	0							
Callahan&Fay	0							
Leo's T Bird Pizza	0							
Advantage Benefits	0							
LightLab Designs	0							
Suney's Pub	1	3,285			11.2		\$526	3,960
Sneakerama Inc.	0							
Harsha Management Co	0							
Davis Advertising	0							
Vega Distributors - Greg's Packing	2	21,862			74.9		\$3,498	18,239
DeBoise Auto Body	1		50		5.0		\$56	584
Miller Fence	0							
Worcester Fitness	1		468		46.8		\$426	5,476
Peppercoms Park Ave	1	12,614			43.0		\$1,403	10,524
Dodge Park LLC	2	3,490	1,858		197.7	59,130	\$2,701	40,788
Le Mirage Café	0							
US Reflector	0							
Mrs Mack's Bakery	0							
Bowditch & Marinelli	0							
Fords Hometown Services	0							
Howard Products	1	954			3.3		\$138	792
<b>Total</b>	<b>17</b>	<b>59,531</b>	<b>2,849</b>	<b>0</b>	<b>488</b>	<b>62,136</b>	<b>\$11,232</b>	<b>100,346</b>

Total # of Implemented Measures: 17  
 Total Electric Savings: 59,531 kWh  
 Total Gas Savings: 2,849 therms  
 Total Oil Savings: 0 gallons  
 Total Propane Savings: 0 gallons  
 Total Energy Savings: 488.0 MMBtu  
 Total Water Savings: 62,136 gallons  
 Total Cost Savings: \$11,232  
 Total CO<sub>2</sub>e Savings: 100,346 pounds

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**APPENDIX D: POST ASSESSMENT FOLLOW UP SURVEYS**

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# Post Assessment Follow Up – A1 Wholesale Windows

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 1<sup>st</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement. The business is planning to insulate the middle wall and install new doors and weatherization. Other measures are in the backburner, and may implement unit heater replacement, water measures, and eco-purchasing paper eventually. On October 5, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-2: Define Thermal Boundary – Simple Payback = 1.9 years

Water: Low Flow Toilet (similar but not exact recommendation, probably is a longer payback)

Renewables: N/A

Sustainability: Turn off electronics at night, weatherstripping

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
1,740	304	36.3	2,257	\$443	5,009

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes. No.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Site visit was the most helpful, discussing the opportunities face-to-face for me worked best. The report was not as helpful as the face-to-face time.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes there was value.

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No.

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**



# Post Assessment Follow Up – Worcester Fitness

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## Summary:

The final energy and sustainability assessment report was presented to this customer on June 4th of 2012. A follow up call was attempted June 18<sup>th</sup> and June 21<sup>st</sup> to discuss the report with the business owner and understand which recommended measures the business intended to implement. At both attempts the contact was busy and a message was left on his voicemail. On October 15<sup>th</sup>, 2012 a post assessment follow up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: WCM-2: Install Low Flow Showerheads – Simple Payback = <1 month

Renewables: N/A

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	468	46.8	115,830	\$426	5,476

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes. Report not available.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes, nothing was missing, it was almost "too much" information.

**Question 3: What information in the report was most useful in your decision making process?**

Smaller measures, energy savings.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes there was value, it should not be excluded.

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

Include more manufacturer or model number recommendations.

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

Nothing in the report was installed, however we eliminated a cooler in the bar area for energy savings somewhat as a result of participating.

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

Yes, smaller measures are planned to be installed over time.

**Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?**

Customer comfort and feedback are the most significant barriers.

**Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?**

Some showerheads were replaced. Other measures are being considered.

**Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?**

No. Yes, others are being considered.

**Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?**

Yes. A little.

**Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.**

4.5

**Question 14: Would you recommend this program to other businesses? Why or why not?**

Yes, it gives you a good idea of what energy savings projects could be done at your facility.

**Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?**

Manufacturer and model number recommendations should be included more, if possible. Settings of recommended equipment and controls should be expanded upon, so that the business owner has more direction on how to proceed.

# Post Assessment Follow Up – Vega Distributors

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## Summary:

The final energy and sustainability assessment report was presented to the customer on April 26<sup>th</sup> of 2012. A follow up call was conducted in early May to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner had indicated they would be interested in pursuing refrigeration improvements. On October 18<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-1: Refrigeration Efficiency, ECM-5: Lighting Efficiency

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
21,862	0	74.9	0	\$3,498	18,239

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, had read the report completely but did not ready access to it.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Project Economics

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

See above.... Incentives were received for both measures.

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

No
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the only barrier
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No, customer already had a strong understanding of the importance of sustainability and energy efficiency before the audit.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, reports were thorough and measure customers did not know about were identified
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – US Reflector

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 14<sup>th</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement, however we left 3 messages after which we did not continue our attempts. On October 12<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: N/A

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes. Report not available at the moment.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

List of measures.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

It could have been excluded.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Nothing was installed..
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
No.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Costs are an issue. Loans or on-bill financing would be considered.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Maybe, we do not have much water use.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No. Maybe, but not at this time.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes. Yes.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
4
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Larger businesses should be focused on, they would be able to handle the financial investment for the measures recommended.

# Post Assessment Follow Up – Suney’s Pub

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 1st of 2012. A follow up call to the business was done at the end of June and the business owner expressed interest in pursuing the lighting and refrigeration measures. On October 4<sup>th</sup>, 2012 the owner was contacted for a post assessment follow-up and phone survey to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: Refrigeration

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
3,285	0	11.2	0	\$526	3,960

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, Yes.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

a. (IF NO) What did you feel was missing from the report that you wish had been included?

Yes

**Question 3: What information in the report was most useful in your decision making process?**

Sections showing the amount of electrical energy saved. ROI analysis.

**Question 4: Do you feel there was value in the detailed discussion of your facility’s current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes, the information was just right. Breakdowns of energy usage are helpful.

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, it was helpful that it explained what could be done. Like the POI analysis.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No, not really.

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

Refrigeration Efficiency Measures. Scope of the installed measures as compared to the measures identified in the report is hard to compare because it was just finished about a month ago and it is too early to tell. Unsure how much is being saved. Doing on-bill financing through the utility.

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

Would like to do the lighting. Singed and returned the lighting forms but the lighting was never completed. Will also do the HVAC measure if the existing equipment fails.

**Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?**

No barriers beyond the initial cost.

**Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?**

No. Savings is too small. Not considering implementing them.

**Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?**

No. Does not feel these apply to his business.

**Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?**

No.

**Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.**

3, work that was done was excellent but lighting was not completed.

**Question 14: Would you recommend this program to other businesses? Why or why not?**

Yes. Energy costs are a significant expense for small business. Any way to save money and reduce those costs should be considered.

**Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?**

Increase rebates.



# Post Assessment Follow Up – Sneakerama

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 24<sup>th</sup> of 2012. A follow up call was conducted on June 5<sup>th</sup> to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner planned to install the water cooler timer measure along with aerators and toilet tank bags in less than 6 months, and the lighting efficiency, programmable thermostats, and rooftop upgrade measure at a later point in time. Sustainability measures planned to be addressed were the ENERGY STAR office equipment/appliances, and eco-purchasing solutions for recycled paper and cleaning products, although the timeframe for implementation was unknown. Feedback from the owner in regards to the report was that it was detailed, great, had a lot of information, was very professional, and formal-looking. On October 23<sup>rd</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes. Yes.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Everything.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

No, it could have been excluded.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes. We plan to incorporate some measures.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Nothing was installed yet.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Yes, possibly lighting, insulation, and water cooler timer.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Time is the biggest barrier, of which we do not have much of.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Yes they are being considered.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No. The eco-friendly cleaning supplies measure is planned.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes. Yes.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Maybe more help in carrying out the bigger projects, such as putting us in touch directly with someone who could help us regarding the lighting, etc. but overall it was very thorough and worked well.

# Post Assessment Follow Up – Prints & Potter Gallery

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## Summary:

The final energy and sustainability assessment report was presented to the customer on April 10<sup>th</sup> of 2012. A follow up call was conducted in late April to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner had reviewed the report and expressed an interest in going forward with the lighting retrofit. On September 26<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-1: Lighting Efficiency

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
8,667	0	29.5	0	\$964	7,231

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, but did not have access to it

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

The availability of zero percent financing and a large incentive from the utility.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

No, this information could have been excluded

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Not really because they are already doing what they can to reuse and recycle waste.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

ECM-1: Lighting Efficiency
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
No
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the significant barrier and understanding the technology involved in making the improvements and whether or not it is the right thing for me to do.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes, I understand what is meant by sustainability now. My perceptions of energy efficiency did not change, I still think it is a good thing.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, to help other business learn how they can save money.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – Peppercorns

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 5<sup>th</sup> of 2012. A follow up call was conducted on June 12<sup>th</sup> to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner planned to install the lighting efficiency and pipe insulation measures along with the water conservation measures in less than 6 months, and the kitchen hood controls measure at a later point in time. The occupancy sensors for the basement already were installed. Sustainability measures planned to be addressed were the ENERGY STAR office equipment/appliances, Sustainable Business Leaders program, composting, and eco-purchasing solutions for organic/local foods, as well as an aggressive maintenance plan for the HVAC equipment. Feedback from the owner was that we did a great job with a very impressive report. On September 25<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-1: Lighting Efficiency – Simple Payback = 0.8 years

Water: None

Renewables: None

Sustainability: Cleaning products, ENERGY STAR equipment (planned), Donate some of food waste (hops from brewery) to pig farm, and Brewery purchases some local hops.

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
12,614	0	43	0	\$1,403	10,524

## Post Pilot Survey:

<b>Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.</b>
Skimmed the whole report. Report not available.
<b>Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?</b>
Yes.
<b>Question 3: What information in the report was most useful in your decision making process?</b>
Payback, cost-effectiveness of specific measures including lighting and kitchen hood controls.
<b>Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?</b>
Yes there was value, it should not be excluded.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes there was value, an understanding is good but reality is different in the restaurant; operation is key, which some of these measures affect and have either been tried in the past and didn't work in this location or have gotten a bad rap by talking to others in the business.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No, never saw a better energy audit report.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Lighting Efficiency: done (most). Scope a little less due to electrician's recommendations. No incentives received, although will look into.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Plan to install pipe insulation and kitchen hood controls in the next 6+ months.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the most significant barrier. Clark University is also a major decision maker in capital improvement projects and does not contribute to large projects if not required. No real barriers other than the initial cost of installation. On-bill financing programs were considered, however none were planned to be received by Peppercorns.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
Nothing done or planned, although the toilet tank bags will be considered again. The pre-rinse spray valve is not believed to be able to give as much pressure as is needed in the kitchen for dish washing.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes, purchasing eco-friendly cleaning products and ENERGY STAR equipment. Also donate hops to pig farm and use local hops in brewery. Other measures are being considered but most will not be implemented due to costs or feasibility issues.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Sustainability perception did not change, already had a good understanding. Energy efficiency perception changed for the better, as the report had much influence.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
For each segment or end use, gather a list of electricians, pig farmers, local contractors, and other experts who the businesses can contact after the audit and report to help more with discussing the project and moving forward with implementation.

# Post Assessment Follow Up – Mrs. Mack’s Bakery

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 1st of 2012. Several follow up calls were attempted two weeks after report delivery to confirm the report was received and answer any questions the business might have. GDS was unable to reach this business and did not receive return phone calls. Throughout the month of October, GDS attempted to contact this business by phone and e-mail multiple times however the phone number was disconnected and we did not receive reply's to our e-mail attempts at outreach. This customer is listed as a non-respondent to the post assessment follow up. We were able to confirm with Prism Energy Services that they had not been contacted to install any of the measures identified in the report.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

# Post Assessment Follow Up – Miller Fence

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 1st of 2012. A follow up call was conducted in early June to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the business expressed an interest in moving forward with the fuel switch from propane to natural gas. On September 25<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, did not have ready access to the report

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Project Economics

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, it's helpful to see ways we might be more sustainable.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

None

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**



Yes, fuel switch
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the most significant barrier and the only barrier.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, to help other business identify ways they can save.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – Magay & Barron Eye Center

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## Summary:

The final energy and sustainability assessment report was presented to this customer on April 10<sup>th</sup> of 2012. A follow up call was conducted on April 27<sup>th</sup> to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner planned to install all measures, however the immediate items were the programmable thermostat and lighting efficiency measures along with the water conservation measures. The owner was less certain about the sustainability recommendations. Feedback from the owner in regards to the report was stated as “good, and comprehensive.” On September 19<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-1: Lighting Efficiency (partial) – Simple Payback = 4.6 years  
ECM-3: Programmable Thermostat Setpoint Optimization – Simple Payback = 0 years

Water: Aerators

Renewables: N/A

Sustainability: Education, Paper reduction

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
3,152	15	12.3	749	\$473	2,798

## Post Pilot Survey:

<b>Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.</b>
Yes, I read the report completely. Report not available at the moment.
<b>Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?</b>
Yes.
<b>Question 3: What information in the report was most useful in your decision making process?</b>
Programmable thermostat and lighting measure descriptions and payback.
<b>Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?</b>
Descriptions and EEM table were most important, other sections could have been excluded.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
There would be value, however I do not think there is much more we can do with recycling or purchasing as we are a small business.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
Measure summaries for non-technical people are important, with appendices for technical. As a small business, the non-technical portions are important. This was laid out well in the report.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Thermostat optimization was installed. Scope was the same as identified in the report. No incentives received.  Lighting efficiency: half of the display lights were retrofit with LED's. The rate structure was not converted. The scope of the measures was less than identified in the report. Utility incentives were not received, however LED's had a \$10 bulb rebate at BJ's and other upstream rebates were possible (as some other LED bulbs were being sold at around \$100 while the ones purchased were primarily less than \$20).
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Possibly window screens (air sealing).
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the most significant barrier. No on-bill financing programs or low interest loans were considered, as the facility is still on a residential rate and none exist.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
Aerators for the store and residential units upstairs (spillover). Yes, toilet tank bags are still being considered for the future.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes, reducing paper is a goal at the facility and employees are educated in the reasons for sustainability. Some of the other measures are being considered, but most will not be implemented due to the complexity and/or cost.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Sustainability perception did not change as I already understood sustainability very well. Regarding energy efficiency my perception of the potential benefit has changed a lot since participating.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
4.75
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, the resulting energy savings will be dramatic.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Reach out to neighborhood groups for marketing to small businesses through the Mayor's Roundtable. Also touch base with Stuart Loosemore as he is a contact at the Chamber of Commerce who would be a good person to get the word out.

# Post Assessment Follow Up – Light Lab Designs

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 25<sup>th</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement. The business is hoping to implement the low cost items (water savings measures, lighting measures) but nothing else at this time due to lack of funds available. Sustainability measures aren't really on his radar screen either, but will be researched further at a later time. On September 27<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Skimmed. Report not available.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

a. (IF NO) What did you feel was missing from the report that you wish had been included?

Yes, in a way, it was extensive. Nothing was missing from the report.

**Question 3: What information in the report was most useful in your decision making process?**

Heat loss information, HVAC specifications information.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes it will be helpful down the road.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
Not really.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
None were installed.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Weatherization is being considered for a 12 month or less timeframe.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Costs. It is hard to do anything at the facility due to accessibility issues (light fixtures are hanging everywhere). The on-bill financing or low interest loan programs were not considered.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. I am not considering implementing any of the other recommended water measures.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No sustainability measures implemented, measures are being considered down the road.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No, we were already aware of sustainability. Overall my opinion regarding energy efficiency did not change.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
4
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, Worcester is an old City, therefore some businesses may benefit.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Not really, you know what you are doing since you are the experts, we are the "dumb" ones. Possibly make the report less complicated although I am not sure how. There could be a cover page of the findings, and details would be included as an attachment report. Whenever I receive a report this large my eyes normally glaze over.

# Post Assessment Follow Up – Leo’s T-Bird Pizza

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 30<sup>th</sup> of 2012. On October 9<sup>th</sup>, 2012 the owner was contacted for a post assessment follow-up and phone survey. The phone survey was then conducted with the business on October 9<sup>th</sup>, 2012 to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, but it is written in engineer language. Yes, has access to it.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

a. (IF NO) What did you feel was missing from the report that you wish had been included?

No, because it is difficult to understand.

**Question 3: What information in the report was most useful in your decision making process?**

N/A

**Question 4: Do you feel there was value in the detailed discussion of your facility’s current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

No

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, there is value but should be simplified.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

Simplify the language for the reader so the material is more understandable.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
None.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Lighting, but it depends on the cost.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost. Yes would financing options from the utility.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Doesn't understand these.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No. No.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
3.
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes. Thinks the report provides good information, just doesn't understand it easily.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Make the reports simpler to read for the businesses.

# Post Assessment Follow Up – Le Mirage Cafe

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 12<sup>th</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement, however we left 3 messages after which we did not continue our attempts. On October 17<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this post assessment follow-up and phone survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: N/A

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

No. Yes.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Costs.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Not much value.



<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
None.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Don't know, possibly duct sealing, pipe insulation, lighting, and storm windows in 12 months.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Costs of AC and heating systems are an issue. Loans or on-bill financing would <u>not</u> be considered.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Yes, faucet aerators and pre-rinse spray valves may be installed.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, but all are being considered.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes. Yes.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Covered everything. Make projects affordable to small businesses.

# Post Assessment Follow Up – Howard Products

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## Summary:

The final energy and sustainability assessment report was presented to this customer on June 13<sup>th</sup> of 2012. A follow up call was attempted two weeks after report delivery to discuss the report with the business owner and understand which recommended measures the business intended to implement, however the owner was not available at this time. On October 2<sup>nd</sup>, 2012 a post assessment follow up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below:

## Measure(s) Implemented:

Energy: ECM-3: Lighting Efficiency – Simple Payback = 2.1 years

Water: None

Renewables: N/A

Sustainability: Eco-purchasing paper

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
954	0	3.3	0	\$138	792

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes, the report was comprehensive. Energy audit reports I have seen are not usually thorough (i.e. from National Grid).

**Question 3: What information in the report was most useful in your decision making process?**

Expertise for specific system-types was really prevalent and helpful to us. It was discovered that converting to gas will not be cost effective unfortunately.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

No, I knew this information already, it could have been excluded.

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, although I knew most of the information provided already.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No, the report was very well organized, easy to jump from section to section as needed.

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

Lighting efficiency. Less than the recommended scope was installed. No incentives are planned to be received.

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

Just the compressed air pressure reduction measure, within 12 months.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost-effective payback line is 5 years or less, all other measures would not even be considered.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
Nothing yet, as the facility staff purchased the wrong aerators. Both measures will be implemented soon.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes, eco-purchasing is being performed. Other measures are being considered, and I plan to contact the Sustainable Business Leaders to pursue their certification.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No, the food industry safety inspectors have been pushing green and energy efficiency. Perception of energy efficiency changed because I now understand about the potential for natural gas fuel switching.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, expertise provided and attention to details were important (compared to National Grid lighting, and safety inspectors).
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Resources for assistance, such as financial help, would be beneficial to my company.

# Post Assessment Follow Up – Harsha Management

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## Summary:

The final energy and sustainability assessment report was presented to the customer on April 10<sup>th</sup> of 2012. A follow up call was conducted in late April to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner had not yet read the report and did not provide any indication as to what, if any measures he would be interested in proceeding with. On September 25<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, had read the report completely but did not ready access to it.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Project Economics

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, it's helpful to see ways we might be more sustainable.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

None

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

Yes, ECM-1 Lighting Efficiency
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the most significant barrier. The lighting incentives being offered is why I want to move forward with that measure.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Customer did not understand the question
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, because we were not pushy with our recommendations.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – Ford’s Hometown Services

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 15<sup>th</sup> of 2012. The customer could not be reached for a two week follow up call. In late October of 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Read through but did not scrutinize in detail. Not on hand.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

a. (IF NO) What did you feel was missing from the report that you wish had been included?

Unable answer

**Question 3: What information in the report was most useful in your decision making process?**

Unable answer

**Question 4: Do you feel there was value in the detailed discussion of your facility’s current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Unable answer

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Unable answer

**Question 6: Do you have any other recommendations on how the reports could be improved?**

Make them shorter, condense the information.

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

None.

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**

Considering the Lighting Upgrades
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Unable answer
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. No.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No. No.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Unable answer
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
(Did not rank) But was happy with the program and the report provided.
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
The report is overwhelming. Should consider sending someone back when the report is done with a one page summary of what the business should do to reduce energy. The information needs to be condensed.

# Post Assessment Follow Up – Foley Engines

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 7<sup>th</sup> of 2012. A follow up call was conducted in late May to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the facility manager had reviewed the report but had not decided what, if any measures would be pursued. On September 26<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: Paper Reuse – Switched from using foam packaging to reused paper packaging.

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, but did not have access to it

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

The description of low cost and no cost measures

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

No, this information could have been excluded

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, because some of these measures were very easy to implement.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**



Set water heater temperature down 10 degrees
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Installing Plexiglas storm windows for the two small windows in the office
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the significant barrier. No other barriers identified
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Switched from using foam packaging to reused paper packaging. No other measures being considered.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes, it made us more aware of how we might be more sustainable and how we use energy.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, because the reports are thorough and specific to the business needs.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
A sit down meeting of all parties prior to the site visit to discuss the business primary areas of interest.

# Post Assessment Follow Up – Dodge Park Rest Home

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 11<sup>th</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement, however we left 3 messages after which we did not continue our attempts. On October 1<sup>st</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-3: Programmable Thermostats – Simple Payback = 1.2 years

Water: WCM-1: Low Flow Pre-rinse Spray Valve – Simple Payback = 0.3 months

Renewables: N/A

Sustainability: Low flow dishwasher (kitchen equipment), ENERGY STAR appliances, programmable thermostat setpoints and schedules, and a recycling program.

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
3,490	1,858	197.7	59,130	\$2,701	40,788

## Post Pilot Survey:

<b>Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.</b>
Yes, but no access to it right now.
<b>Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?</b>
Yes, energy efficiency-wise.
<b>Question 3: What information in the report was most useful in your decision making process?</b>
List of ECM's was the most important, along with costs and how to proceed next.
<b>Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?</b>
No opinion either way. I would have preferred this be more confidential in terms of total energy costs so that the financial details could not be viewed by others.
<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes.

<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
Nothing regarding the report.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Programmable thermostats added, others planned. Scope was the same. Rebates not received.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
"All measures" are planned to be installed within the next 12 months or so. After refinance process all will be done.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Practical nature and comfort are the two largest barriers.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
Low flow pre-rinse spray valve installed, the rest are planned.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes, ENERGY STAR appliances installed, dishwasher replaced with low gallons per wash, programmable thermostat setpoints and schedule, and recycling program implemented. Yes, others are being considered.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes, somewhat.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, you never know everything.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Loans or grant or related financial support for installations could be provided by the City.  The program should be a collaboration with the facility, consultant, delivery companies, suppliers, installers, central purchasing agencies, and others to expand the City's internal business-related network to provide more sustainable and energy efficiency connected projects and programs to the local businesses.  One idea for sustainability is for there to be "paperless companies" that do not print out any paper, they just use digital copies or emails.  Different types of businesses should be targeted.

# Post Assessment Follow Up – DeBoise Auto Body

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 7<sup>th</sup> of 2012. A follow up call was conducted on June 14<sup>th</sup> to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner planned to install all of the low cost measures as soon as he could. The boiler reset control has already been installed. Lighting and pipe insulation along with the water savings measures will be addressed in the near future. Other measures will take some time due to the lack of capital. Some sustainability measures have already been done, for instance reusable rags and low-VOC water-based paints, however others will be done when further review of the recommendations have been done and when capital is available. Feedback from the owner in regards to the report was that it was very impressive, detailed, and extensive; even though not much capital is currently available they will use the report for the long term and will start to install measures when possible. On October 4, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: ECM-5: Boiler Reset Controls – Simple Payback = 2.5 years

Water: None

Renewables: N/A

Sustainability: Reusable rags, low-VOC water-based paints

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	50	5.0	0	\$56	584

## Post Pilot Survey:

<b>Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.</b>
Not whole report. No.
<b>Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?</b>
Yes.
<b>Question 3: What information in the report was most useful in your decision making process?</b>
Lots of stuff: payback and cost were most useful.
<b>Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?</b>
Yes.
<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Not really.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the</b>

<b>measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
None.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
No, costs are a big concern at the moment.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Costs. No barriers beyond costs. I did and would consider the on-bill financing programs.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Maybe I will consider them in the future.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes – reusable rags, low VOC paints. Others are being considered if there is no or minimal cost.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No. No.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
4
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, it is a win-win for participants and the City.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No recommendations.

# Post Assessment Follow Up – Davis Advertising

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## Summary:

The final energy and sustainability assessment report was presented to the customer on April 20<sup>th</sup> of 2012. A follow up call was conducted in early May to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the facility manager had reviewed the report but the business owner and decision maker had not. The facility manager indicated that installing roof insulation was a measure they would likely move forward with. On September 25<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Yes, and did have ready access to it.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Yes.

**Question 3: What information in the report was most useful in your decision making process?**

Project economics were helpful but just as important as the ECM recommendations was a discussion on measures that were looked at but not recommended because they presents a poor return on investment. The discussion on Unit HVAC units was very helpful

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Yes

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Yes, though it was disappointing to see that paying for a separate recycling dumpster is the only option for us since it not something we are willing to do. If there was a recycling center where we could bring our paper wastes, that is something we would be interested in but unfortunately the City of Worcester does not have anything like that.

**Question 6: Do you have any other recommendations on how the reports could be improved?**

No

<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
None
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Yes, ECM-4 Roof Insulation
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is certainly a factor but we also do not want to reduce the light levels in the facility by installing occupancy sensors. When clients come through the building, we want the lights on in all the spaces.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No, No
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, because the report and recommendations were thorough
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – Callahan and Fay

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 29<sup>th</sup> of 2012. A follow up call was conducted in early June to discuss the report with the business owner and understand which recommended measures the business intended to implement. At the time of this call, the owner had not yet read the report and did not provide any indication as to what, if any measures he would be interested in proceeding with. On October 18<sup>th</sup>, 2012 a post assessment follow-up and phone survey was attempted with the business to assess implementation of recommendations and overall satisfaction with the pilot. At the time of this call, the business owner indicated that he still had not read the report.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implementation Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	0	0

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

Customer had not read the report

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

Could not answer

**Question 3: What information in the report was most useful in your decision making process?**

Could not answer

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Could not answer

**Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:**

Could not answer

**Question 6: Do you have any other recommendations on how the reports could be improved?**

Could not answer

**Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?**

None

**Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?**



Don't know
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost is the most significant barrier.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
No, No
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
No, No
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
3
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, to help other business identify ways to save money
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
No

# Post Assessment Follow Up – Bowditch & Marinelli

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 25<sup>th</sup> of 2012. An initial follow-up call was attempted as a courtesy to the owner to discuss the report and understand which recommended measures the business intended to implement however the owner was not available to discuss the report during the attempted time period in June. On September 28<sup>th</sup>, 2012 a post assessment follow-up and phone survey was conducted with the business to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

## Post Pilot Survey:

<b>Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.</b>
Yes, quickly. Yes.
<b>Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?</b>
Yes, report was awesome.
<b>Question 3: What information in the report was most useful in your decision making process?</b>
Summary of ECM's, executive summary, projected costs.
<b>Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?</b>
Some value, but not too useful in our case since we lease, it should be in here especially if the business owns the building.
<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Yes, it made us think about saving the environment.

<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
No, it was way more professional and extensive than anticipated, especially compared to National Grid and other programs' audit reports, I was very impressed.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Nothing yet.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Will install lighting controls, lighting efficiency, and plug load occupancy controls in less than 6 months.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Cost. Time and effort for big items are barriers beyond initial cost. I wouldn't consider on-bill financing or loans, but the landlord might.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
None yet, but they are planned for the winter.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes, fill dishwasher, use paper for notes, the new cleaning people use eco-friendly cleaning products. Plan to consider implementing other measures as needed.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes, sustainability perception sort of changed, pointing out items was a "bump." Regarding energy efficiency the audit makes you think, but we don't own the building so can't do the big ticket items.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, it was "kind of fun," somewhat educational, and the report was very professional, well done, and easy to read. It is a good way to get energy efficiency and sustainability into our consciousness.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Not for the inspection or the report, I thought they were very professional and well done. However for follow-up it could be improved; there may be ways to support or encourage changes, following through with businesses more, but without "nagging". Hand holding through next steps could help some businesses. Also it could be helpful to reach out to building owners of small business leases directly to achieve a better cooperation with the building owners for large capital expenditure items.

# Post Assessment Follow Up – Barney’s Bicycle

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## Summary:

The final energy and sustainability assessment report was presented to the customer on May 30<sup>th</sup> of 2012. Two initial follow-up calls were attempted as courtesy calls to the business owner in order to discuss the recommended measures and clarify any questions. On both call attempts the owner was reached but due to a busy schedule had not been able to review the report. On October 1<sup>st</sup>, 2012 the owner was contacted for a post assessment follow-up and phone survey. The owner had still been unable to review the report but assured GDS that it would be reviewed within the week so that the follow-up phone survey could be conducted. The phone survey was then conducted with the business on October 11<sup>th</sup>, 2012 to assess implementation of recommendations and overall satisfaction with the pilot. The results of this follow up in addition the post pilot survey are presented below.

## Measure(s) Implemented:

Energy: Lighting Efficiency  
 Programmable Thermostats

Water: None

Renewables: None

Sustainability: Cardboard Recycling Dumpster

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
3,767	154	28.2	0	\$604	4,945

## Post Pilot Survey:

**Question 1: Have you had an opportunity to read through the report completely? Do you have ready access to it? It might be helpful for this survey if you do, though certainly not required.**

No, has read the executive summary and paged through some other portions of report. Does have access to the report.

**Question 2: Do you think the report provided sufficient information for you to make an informed decision about proceeding with any of the recommended improvements?**

a. (IF NO) What did you feel was missing from the report that you wish had been included?

Can't really answer that. Thought the site visit was very helpful and discussion of measures at site visit helped make his decision to proceed.

**Question 3: What information in the report was most useful in your decision making process?**

Not so much the report that was helpful, but speaking to auditors during site visit was good.

**Question 4: Do you feel there was value in the detailed discussion of your facility's current energy use and the type of building systems, or could this information have been excluded without impacting your decision making process?**

Saw that there was discussion of building systems. Does not feel this is necessary to make decisions. Since he provided the information about the building systems this part of the report did not teach him anything he didn't already know.

<b>Question 5: Do you feel there was value in the discussion of sustainability and the recommendations for incorporating sustainable business practices? Please explain:</b>
Did not read through this section. Cannot answer.
<b>Question 6: Do you have any other recommendations on how the reports could be improved?</b>
Don't need to include the information that was provided by the business owner when the owner is the audience. Thinks the report is going overboard with too much information. Should be streamlined.
<b>Question 7: What energy efficiency measures, if any, from the report have you installed? Do you believe that the scope of the measures implemented was the same, greater, or less than the scope of the measures identified in the report? Did you receive or do you plan to receive any incentives for the installed measures?</b>
Lighting, Thermostats. Scope was the same. Very satisfied with installations. Did the 70%/30% cost share with the Utility company.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
No. HVAC replacement is expensive, but would consider if there were better rebate available.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
The payback of the projects. Long paybacks are not economical for the business.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
No. Use such little water, doesn't seem necessary.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Cardboard Dumpster. Not considering any others.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes. Have more of a positive view of both sustainability and energy efficiency. Sees the impact between energy efficiency and his electric bills.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5 very satisfied.
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes, and has already recommended it.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Improve the promotion of the program.

# Post Assessment Follow Up – Advantage Benefits

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## Summary:

The final energy and sustainability assessment report was presented to the customer on June 1st of 2012. Several follow up calls were attempted two weeks after report delivery to confirm the report was received and answer any questions the business might have. GDS was unable to reach this business and did not receive return phone calls. Throughout the month of October, GDS attempted to contact this business by phone and e-mail multiple times with no success. This customer is listed as a non-respondent to the post assessment follow up. It should be noted that at the time of the audit, a building owned by the business adjacent to the audited facility had a major fire. During much of the audit, the owners were pre-occupied while dealing with the other property.

## Measure(s) Implemented:

Energy: None

Water: None

Renewables: None

Sustainability: None

## Annual Implemented Impacts:

Electricity Savings (kWh)	Natural Gas Savings (therms)	Total Energy Savings (MMBtu)	Water Savings (gallons)	Cost Savings (\$)	CO <sub>2</sub> e Reduction (lb)
0	0	0	0	\$0	0

Define Thermal Boundary – half done, will be done soon.
<b>Question 8: Are there any measures you are considering installing in the next 6 months? 12 months?</b>
Yes – occupancy sensors within 12 months.
<b>Question 9: What would you say is the most significant barrier for your business to invest in energy efficiency? Were there any barriers beyond the initial cost of installation? Did you consider the on-bill financing programs, or low interest loan programs offered by your utility company?</b>
Payback.
<b>Question 10: Have you implemented any of the recommended water conservation measures? Are you considering implementing any of the other recommended measures?</b>
Low flow toilet (instead of toilet bags). Aerators will be installed later.
<b>Question 11: Were any sustainability measures implemented? Are you considering implementing any of the other recommended measures?</b>
Yes – turn electronics off at night, weatherstripping, and maintenance plan. Yes.
<b>Question 12: Did your perceptions of sustainability change at all as a result of participating in this program? Regarding energy efficiency?</b>
Yes. Yes.
<b>Question 13: On a scale of 1 to 5, where 1 is not satisfied and 5 is very satisfied, please describe your overall satisfaction with the Worcester Energy Program Small Business Assessment pilot.</b>
5
<b>Question 14: Would you recommend this program to other businesses? Why or why not?</b>
Yes.
<b>Question 15: Do you have any recommendations for how the program could be improved if it were continued in the future?</b>
Hand-holding through next steps, and discounts with suppliers would be helpful.