Green Communities Designation and Grant Program

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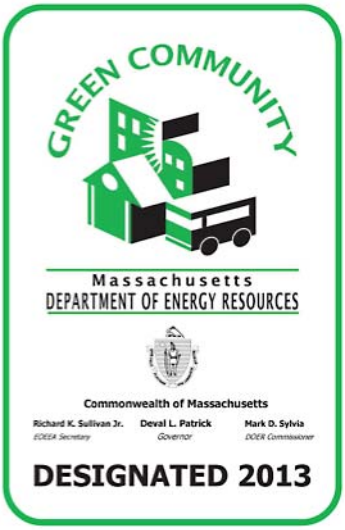


As part of the Massachusetts Department of Energy Resources' (DOER) mission to accelerate the adoption of energy efficiency and clean energy technologies in the Commonwealth, the Green Communities Designation and Grant Program (the Program) provides qualifying municipalities with financial and technical assistance.

DOER engaged the consulting firm ICF International (ICF) to provide support to the Program's annual review process and evaluate the Program's current progress. ICF interviewed ten selected municipalities about their experiences with the Program and, based on their feedback, developed a survey for all Green Communities on the successes and challenges of participating in the Program. This progress report combines insights from the interviews and surveys with quantitative data on criteria-specific achievements derived from the Annual Reports designated Green Communities are required to file with DOER after at least one year of participation in the Program.

Program Background

Following passage of the Green Communities Act in 2008, DOER launched the Green Communities Designation and Grant Program in 2009. DOER's Green Communities Division initially offered planning assistance at no charge for cities and towns interested in pursuing Green Community designation, and the Commonwealth's first 35 Green Communities received designation in 2010. There are currently 123 participating municipalities, with an eighth round of designations expected by the end of 2014.

To achieve designation as a Green Community, municipalities must meet five criteria, as outlined in the statute:

1. Provide as-of-right siting in designated locations for renewable/alternative energy generation, or research and development, or manufacturing facilities
2. Adopt an expedited application and permit process for as-of-right energy facilities
3. Establish an energy use baseline and develop a plan to reduce municipal energy use by 20 percent after five years
4. Purchase only fuel-efficient vehicles
5. Set requirements to minimize life-cycle energy costs for new construction; the recommended way to meet these requirements is to adopt the Board of Building Regulations and Standards (BBRS) Stretch Code

Close to $38 million from Green Community grants is already at work in 123 communities. Upon designation, a community is awarded a base grant of $125,000, plus an adder based on population and per capita income and a bonus of $10,000 if it met Criterion 1 through zoning for renewable/alternative energy generation (as opposed to renewable/alternative energy

manufacturing or research and development (R & D), which are also options). Designation grants are capped at $1,000,000. Once all previous funding has been spent and all required reporting is complete, a designated Green Community may apply for competitive grants. The total amount of competitive awards depends on available funds and the number of applications. The annual competitive grant program was first offered in March 2012 and has so far offered annual grants of up to $250,000 per successful applicant. Communities typically combine Program designation and competitive grants with utility incentives and other funding to complete their energy projects.

Communities that have been designated for a full year must submit Annual Reports to the Division to demonstrate that they continue to adhere to the requirements of all five criteria.

Criterion-Specific Background

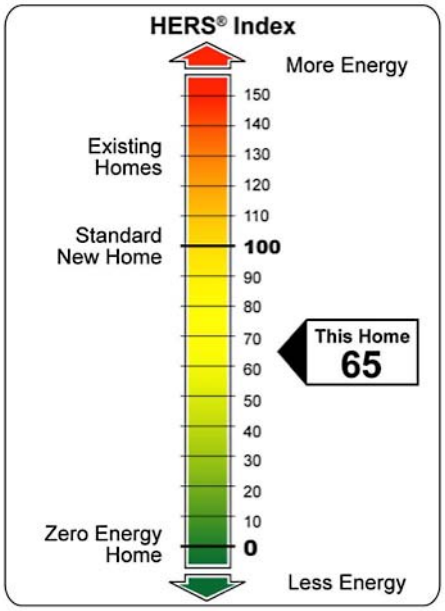
Criterion 1 requires that the community provides as-of-right siting in designated locations for renewable/alternative energy generation, R & D, or manufacturing facilities. Allowable renewable and alternative energy generation includes on-shore wind, offshore wind, solar photovoltaic, or biomass combined heat and power (CHP). During the designation process, communities are required to submit a description of the bylaw or ordinance that identifies designated locations, zoning information, any applicable local regulations, and other related documentation. For annual reporting, Green Communities must notify DOER if any changes have been made to the zoning districts identified during designation.

Criterion 2 requires that the community adopt an expedited application and permit process (one-year) for clean energy facilities located in the areas designated as-of-right under Criterion 1. For annual reporting, Green Communities must notify DOER if any projects have applied for approval under the zoning that qualified them for designation.

Criterion 3 requires that the community establish an energy use baseline and adopt an Energy Reduction Plan (ERP) to decrease energy use by 20 percent from that baseline after five years of implementing the ERP. During the designation process, communities establish a baseline year and determine their baseline energy usage. Most communities use a Fiscal Year schedule (July 1 through June 30), but some choose to use the Calendar Year (January 1 through December 31) to determine their baseline year and energy usage. DOER allows communities to opt for a baseline that is up to two years prior to their designation in order to account for energy efficiency work they completed before applying for designation. For communities that choose to set the baseline a year or two prior to designation, their first year in the Program may actually be the second or third year of working on their ERP. Similarly, DOER allows communities that have installed energy conservation measures in their fifth year to achieve the full energy savings from these measures by waiting a full year to assess their progress toward the 20 percent energy reduction commitment. Effectively, this means that some communities will achieve their 20 percent reduction after year six and still be considered to have met their designation commitment.

The baseline energy use inventory must include all municipal divisions and departments including all municipal buildings, school buildings, municipal and school vehicles, street and traffic lighting, drinking water and wastewater plants, pumping stations and open spaces owned by the city or town. For annual reporting, communities are required to report on their energy use during the past year, any energy conservation measures (ECMs) that were implemented, and if they used any energy produced by renewable sources. To track their energy use, communities are encouraged to use MassEnergyInsight (MEI), a municipal energy inventory tool developed by the Green Communities Division and offered to municipalities and other public entities free of charge.

Criterion 4 requires that the community adopt a policy to purchase only fuel efficient vehicles (FEV) for municipal use whenever they are available and practicable. Vehicles that are exempt from the FEV Policy include heavy duty vehicles that have a gross vehicle weight rating (GVWR) of more than 8,500 pounds, as well as police cruisers, passenger vans, and cargo vans. For annual reporting, communities are required to submit an updated vehicle inventory of both exempt and non-exempt vehicles, noting any changes from the previous year.



Criterion 5 requires the community to set requirements to minimize life-cycle energy costs for new construction. The recommended way to meet this requirement is by adopting the Board of Building Regulations and Standards (BBRS) Stretch Code. A Home Energy Rating System (HERS) assigns a numerical rating to a newly-constructed residential building based on its energy efficiency features. To comply with the Stretch Code, homes greater than 3,000 square feet must have a HERS score of 65 or less and homes less than 3,000 square feet must have a HERS score of 70 or less. Commercial buildings larger than 100,000 square feet must be designed to use 20 percent less energy relative to ASHRAE 90.1-2007[1], as demonstrated through modeling, while those between 5,000 and 100,000 square feet must either adhere to the same approach or include a set of prescriptive requirements for particular efficiency measures. For annual reporting, communities are required to submit a list of all residential and commercial projects affected by the Stretch Code, noting completion and Certificate of Occupancy dates for all projects, as well as the final HERS rating for new homes.

[1] ASHRAE 90.1 is a US standard that provides minimum requirements for energy efficient designs for buildings except for low-rise residential buildings. ASHRAE 90.1-2007 is the version that was updated in 2007 and covers many sections of a building, which include building envelope, HVAC, hot water, and lighting. It has since been updated in 2010 and 2013 to reflect newer and more efficient technologies.

Key Findings

This progress report recounts Program-level, as well as criterion-specific findings, and shares feedback from the interview and survey outreach about ways DOER might improve the Program. Overall, participating municipalities offered highly positive comments about the Green Communities Program. Of the survey responders, more than three-quarters indicated that the Program was effective at addressing energy use and climate change in their communities.

Program Benefits: According to those interviewed, funding for energy conservation projects, greater awareness of energy-use, and community cohesion are three benefits of becoming a Green Community. When survey respondents were asked to identify the reasons they continued to participate in the Program, more than 90 percent indicated a desire to reduce municipal energy use. A significant portion of the energy reduction that municipalities are able to realize is due to the implementation of Green Communities grant-funded projects.

Program Challenges: Nearly 66 percent of survey respondents cited challenges related to municipal staff capacity, noting the Program's annual reporting requirements exceed the technical knowledge and available time of most volunteers, and city and town staff are often overburdened with other work.

Criteria 1 and 2: Nearly 80 percent of respondents indicated that they did not at the time of the survey have projects or plans to develop renewable energy facilities in their Criterion 1 designated zones. Results from the 2013 Annual Report review indicate that only 11 municipalities have projects sited and permitted within their designated zones. A spillover impact of the Criteria 1 and 2 emphasis on renewable power, however, has been that designated Green Communities have developed new renewable energy projects within their municipalities *at large (*i.e., not necessarily within the designated zones, but within their borders). Fifty Green Communities have completed or are planning 107 renewable energy projects. Solar is the most prevalent, but wind and thermal projects are also cited.

High efficiency gas-fired hot water heaters installed in Medford.

Criterion 3: Based on data current as of the 2013 Annual Reports, Green Communities have seen energy savings of approximately 3.2 million MMBtu, equivalent to 24,810 Massachusetts homes powered and heated, with the highest savings seen in ECMs implemented in buildings. Vehicles are also shown to have high energy savings, with municipalities seeing on average 11 percent reductions in their vehicle energy usage by Year 5 of their ERP. As of the writing of this report, two communities have implemented their ERP for five years and achieved the 20 percent reduction committed to in their ERP.

Criterion 4: Based on data current as of the 2013 Annual Reports, 36 Green Communities acquired 104 fuel-efficient vehicles with an average fuel economy of 24 mpg in 2013. These were made up of new purchases, replacement vehicles, and acquisition by drug seizure. Twenty-seven communities report owning hybrid electric vehicles (HEVs) and four own at least one all-electric vehicle (EV) model.

Criterion 5: Roughly half of municipalities reported in their 2013 Annual Reports that complying with the Stretch Energy Code has not been a significant hurdle, although community buy-in, particularly among builders, is a critical factor cited by about a third of reporting communities.

Program Feedback

Through the interview and survey process, participating municipalities provided feedback about ways in which the Program could improve. Nearly 20 percent of survey respondents indicated that the Program is running optimally and they did not have any further suggestions.

In general, the vast majority of survey respondents and those interviewed spoke of the tremendous support provided by Green Communities Division Regional Coordinators (RCs) and the overall ease of participating in this Program. A few voiced an interest in more Program-level communication from DOER. For example, a handful of respondents requested additional guidance from DOER about what communities should do if they are not able to meet the 20 percent reduction goal. Additionally, several respondents asked for more information about best practices from other communities across the Program.

In terms of Program reporting, nearly 40 percent of survey responses indicated that reporting requirements were justified. Given the staff capacity issues in many municipalities, however, many did express a desire for additional technical assistance such as support from an Energy Manager. Most of the desired capacity was for support associated with energy use reporting (using the MEI tool); however there was some interest expressed for additional support associated with Stretch Code and Vehicle Fleet reporting. (It is important to note that, in response to similar comments from municipalities, DOER in 2013 initiated an Energy Manager grant program and awarded grants in May 2014 for 36 cities and towns to hire full- or part-time Energy Managers. DOER held an all-day training session for the newly-hired Energy Managers in September 2014.)

During the interview process, several participants suggested that each community should receive the annual reporting template and tables upon designation so they can reach out to relevant departments and let them know what will be required for building and vehicle reporting. Several survey responses also indicated a need for more technical assistance with project planning and execution. Support selecting projects and navigating project implementation (e.g. support with contractors and utilities) is needed, they said. (Importantly, the Green Communities Division has responded to similar previous requests from municipalities for technical assistance, beginning with support provided with federal Recovery Act funds and followed by three rounds of Owner's Agent Technical Assistance grants from 2012−2014.)

Several municipalities indicated a desire for greater flexibility in terms of the types of projects that could be funded and the funding frequency and value. There was interest in broadening the flexibility in the grant opportunities for hybrid vehicles, real-time data monitoring and diagnostic software, and energy audits.

PROGRESS REPORT OVERVIEW

ICF International (ICF) conducted a review of each of the 2013 Annual Reports submitted by participating communities and identified metrics for each criterion that could be used to benchmark the Program's status. These data were augmented with interview outreach and a survey to gather information about participants' Program experiences.

Chelmsford is a designated Green Community.

In coordination with the Green Communities Division Regional Coordinators, ICF identified and interviewed ten participating municipalities from across the Commonwealth to get a deeper understanding of the Program's impact. These interviews were conducted in February 2014. For details, see **Appendix A,** the *Interview Guide Questions*. During these interviews, ICF asked each participating municipality about the challenges and opportunities during each phase of the Program—(1) becoming a Green Community, (2) spending the grant monies, and (3) continued participation in the Program—and then probed specific successes and challenges associated with each criterion. See **Appendix B,** for the list of municipalities that participated in the interview outreach.

Based on feedback from these interviews, ICF developed and implemented a web-based survey to solicit similar feedback from all participating municipalities (see **Appendix C,** the *Survey of Participating Green Communities*). Similar to the interview protocol, the survey asked municipalities about their experiences meeting the requirements associated with each criterion, as well as the Program overall. The survey received 87 responses from 84 municipalities across the Commonwealth. **Appendix D,** includes the full survey responses.

This progress report combines insight from the interviews and the survey with quantitative data on criterion-specific Program achievements obtained from the 2013 Annual Reports.

PROGRAM BACKGROUND

This section provides background information on the Green Communities Designation and Grant Program, its history, the process of becoming a designated Green Community and the criteria-specific requirements. This information is useful in understanding the metrics used and findings reported in the remainder of this report.

Program History and Process

DOER launched the Program in 2009, as a result of passage of the Green Communities Act of 2008, and designated its first cohort of Green Communities in 2010. Green Communities are eligible for funding to support clean energy projects. Funding is provided primarily from proceeds of carbon allowance auctions under the Regional Greenhouse Gas Initiative (RGGI) and Alternative Compliance Payments (ACP) made by electricity suppliers that do not meet their statutory Renewable Portfolio Standard obligation to purchase a sufficient percentage of renewable energy.

To achieve designation as a Green Community, municipalities must meet five statutory criteria:

1. Provide as-of-right siting in designated locations for renewable/alternative energy generation, or research and development, or manufacturing facilities
2. Adopt an expedited application and permit process for as-of-right energy facilities
3. Establish an energy use baseline and develop a plan to reduce energy use by 20 percent after five years
4. Purchase only fuel-efficient vehicles
5. Set requirements to minimize life-cycle energy costs for new construction; the recommended way to meet these requirements is to adopt the Board of Building Regulations and Standards (BBRS) Stretch Code

These five criteria are further discussed above in the **Criterion-Specific Background** section.

There have been seven rounds of designation since the Program originated, and there are currently 123 participating municipalities. Close to $38 million from Green Community grants are already at work in 123 communities (nearly $23.6 million in seven rounds of designation grants, and over $14 million in three rounds of competitive grants).

Designated Green Community Auburn receives grant funding.

Upon designation, a community is awarded a base grant of $125,000 plus an adder based on population and per capita income, as well as a bonus of $10,000 if it met Criterion 1 through zoning for renewable/alternative energy generation (as opposed to renewable/alternative energy manufacturing or research and development (R & D), which are also options). Designation grants are capped at $1,000,000.

Once all previous funding has been spent and all required reporting is complete, a designated Green Community may also apply for competitive grants. The total amount of competitive awards depends on available funds and the number of applications. The annual competitive grant program was first offered in March 2012 and has so far offered grants of up to $250,000 per successful applicant. Communities typically combine Program designation and competitive grants with utility incentives and other funding to complete their energy projects.

Massachusetts General Law Chapter 25A, Section 14 allows for municipal energy conservation projects to be contracted directly through the electric and gas utilities, their subcontractors and other providers if the total project cost is $100,000 or less. The benefit to municipalities is that project procurement does not require a solicitation process and they work with vendors that are familiar with the utility rebate programs and other processes.

After a community has been designated for a full year, it must submit an Annual Report to demonstrate that it continues to adhere to the requirements of all five criteria. One hundred three Green Communities were required to submit Annual Reports in 2013.

Criterion-Specific Background

Criterion 1 requires that the community provides as-of-right siting in designated locations for renewable/alternative energy generation, R & D, or manufacturing facilities. Allowable renewable and alternative energy generation includes on-shore wind, offshore wind, solar photovoltaic, or biomass CHP. During the designation process, communities are required to submit a description of the bylaw or ordinance that identifies designated locations, zoning information, any applicable local regulations, and other related documentation. For annual reporting, Green Communities are required to notify DOER if any changes have been made to the zoning districts identified during designation.

Criterion 2 requires that the community adopt an expedited application and permit process (one year) for clean energy facilities located in the areas designated as-of-right under Criterion 1. For annual reporting, Green Communities must notify DOER if any projects have applied for approval under the zoning that enabled them to receive designation.

Criterion 3 requires that the community establish an energy use baseline and develop an Energy Reduction Plan (ERP) plan to decrease energy use by 20 percent from that baseline at the end of five years of implementing the ERP. During the designation process, communities establish a baseline year and determine their baseline energy usage. Most communities use a Fiscal Year schedule (July 1 through June 30), but some choose to use the Calendar Year (January 1 through December 31) to determine their baseline year and energy usage. DOER permits communities to opt for a baseline that is up to two years prior to their designation in order to account for any energy efficiency work they completed prior to applying for the Program. For communities that choose to set the baseline a year or two prior to designation, their first year in the Program may actually be the second or third year of working on their ERP. The baseline energy use inventory must include all municipal divisions and departments including all municipal buildings, school buildings, municipal and school vehicles, street and traffic lighting, drinking water and wastewater plants, pumping stations and open spaces owned by the city or town. For annual reporting, communities are required to report on their energy use during the past year, any ECMs that were implemented, and if they used any energy produced by renewable sources. To track their energy use, communities are encouraged to use MEI, a

municipal energy inventory tool developed by the Green Communities Division and offered to municipalities and other public entities free of charge.

Criterion 4 requires that the community adopt a policy to purchase only fuel efficient vehicles (FEV) for municipal use whenever they are available and practicable. Vehicles that are exempt from the FEV Policy include heavy duty vehicles that have a GVWR of more than 8,500 pounds, as well as police cruisers, passenger vans, and cargo vans. For annual reporting, communities must submit an updated vehicle inventory of both exempt and non-exempt vehicles, noting any changes from the previous year.

Criterion 5 requires the community to set requirements to minimize life-cycle energy costs for new construction. The recommended way to meet this requirement is by adopting the BBRS Stretch Code. A Home Energy Rating System (HERS) assigns a numerical rating to a newly-constructed residential building based on its energy efficiency features. To comply with the Stretch Code, homes greater than 3,000 square feet must have a HERS score of 65 or less and homes less than 3,000 square feet must have a HERS score of 70 or less. Commercial buildings of larger than 100,000 square feet must be designed to use 20 percent less energy relative to ASHRAE 90.1-2007, as demonstrated through modeling, while those between 5,000 and 100,000 square feet must either adhere to the same approach or include a set of prescriptive requirements for particular efficiency measures. For annual reporting, communities are required to submit a list of all residential and commercial projects affected by the Stretch Code, noting completion and Certificate of Occupancy dates for all projects, as well as the final HERS rating for new homes.

PROGRAM-LEVEL FINDINGS

Overall feedback on the Green Communities Program from participating municipalities was highly positive. Of the 87 survey responders, more than three-quarters indicated that the Program was effective at addressing energy use and climate change in their communities. Less than 5 percent of respondents indicated that the Program was less than average in effectiveness.

One aspect of Program effectiveness is the hands-on support provided by the Regional Coordinators (RCs). In addition to the technical support provided by all RCs, some communities in the Northeast region said that the peer information exchange meetings organized by their RC has been hugely beneficial.

Benefits of Becoming A Green Community

- Funding for energy conservation projects
- Greater awareness of energy-use
- Community cohesion

Interviewees noted that the Program compels communities to become aware of and track their energy usage. Combining this knowledge with access to capital and a framework to initiate energy conservation projects means that communities can identify and implement improvements efficiently and without burden to individual department budgets. Respondents also mentioned that the Program provided education to municipal residents, which in turn motivated residents to take individual action. Interviewees spoke of increased community cohesion and "bragging rights" that participation in the Program seemed to foster.

Designation Process

Across the designated Green Communities, there is much diversity in terms of the emphasis municipalities placed on clean energy and sustainability prior to entering the Program. Some communities had dedicated staff and community volunteer organizations working on similar issues prior to the Green Communities Program, while others did not and relied instead on staff in other municipal departments such as planning, parks, recreation, or facilities management to spearhead Green Communities designation efforts. Some assembled a team of volunteers and/or municipal staff to support the designation. As is discussed later in this report, many communities cited lack of staff/volunteer capacity as contributing to challenges of complying with the Program. ICF found that a community's experience during the designation process may be indicative of continued issues of capacity. For example, communities that had the capacity to assign a staff person to manage the designation process were more likely to have continued capacity to fulfill annual reporting requirements.

Community Experiences: Designation Process: *Who Was Involved?*

In 2005, prior to the Green Communities Program launch, the town of Winchester established a volunteer-based Energy Management Committee. The town also had a part-time Energy Conservation Coordinator, whose primary focus was on energy conservation efforts. With the launch of the Green Communities Program, the Energy Coordinator's role was expanded. The Committee and Coordinator were instrumental in Winchester's Green Community designation, as were members of two existing local "green" organizations: Cool Winchester and Sustainable Winchester. Key input was also provided by municipal personnel such as the town planner and a planning board member. The Energy Conservation Coordinator has responsibility for coordinating and compiling Winchester's Annual Report.

In contrast, in the town of Ashfield, the Green Community Program was the impetus for the formation of a Green Communities Committee, whose charge was to support Ashfield's designation. The Committee is comprised of three volunteers, all of whom have relevant experience in either construction/building or energy efficiency. The Committee was not only responsible for the designation, but continues to support all aspects of the Program. Recognizing the significant time commitment needed to manage the grant-funded projects and Program reporting requirements, Ashfield was one of the communities that applied for and was awarded Energy Manager support by the Green Communities Division in May 2014.

Survey respondents were asked several questions about their experiences during the designation process and reasons for joining the Program. More than 55 percent of survey respondents indicated that their community's energy committee was responsible for completing the designation process. When asked to identify the top three reasons why their communities applied to become a Green Community, more than 80 percent of respondents cited a desire to reduce municipal energy use. Additionally, 64 percent of respondents indicated a primary interest in securing state funds and 52 percent cited an interest in reducing costs.

Forty-three Green Communities received competitive grants at an event in July 2014 in Ashland, a designated Green Community.

Table 1. Top Three Reasons Your Community Applied to be a Green Community

Reason for Applying (Top 3)	Response
To reduce municipal energy use	81%
To secure state funding	64%
To reduce costs	52%
Desire for recognition as a "green" municipality	31%
To reduce greenhouse gas emissions	28%
Encouragement and/or instigation by local citizens and/or Energy Committee	28%
Personal interest of municipal leaders	18%
To provide education/awareness on clean energy and the environment	13%
To improve community health	1%
To spur economic/job creation	0%

Interview participants also offered a more nuanced perspective on the benefits of becoming a Green Community. Half the municipalities interviewed indicated that the Program provided the capital and framework to initiate energy conservation projects, and the continued grant support allowed the community to implement the improvements over time. Since Criterion 3 requires communities to track their energy consumption, the municipalities became more aware of their energy use, which is another benefit. Lastly, those interviewed mentioned that participation in the Green Communities Program had led to greater community cohesion and "bragging rights" based on their successes. It has been an opportunity to educate residents and raise the level of interest in sustainability.

Participating in the Program

According to interview participants, one of the key benefits of participating in the Green Communities Program is related to its focus on energy tracking, which forces the community to understand and pay continued attention to its energy usage. Furthermore, the Green Communities Program provides a framework for department heads to prioritize and plan facility improvements.

Community Experiences: Program Participation—*Broader Impacts*

Mendon is a small town, but it has experienced a big impact from participation in the Green Communities Program, from project funding to community education and economic development. Despite a tight municipal budget, Mendon has been able to tackle a series of projects, such as installing insulation, outdoor LED lighting, and furnace and boiler replacements, thanks to the Green Communities Program. Several articles in the local paper have covered the energy savings achieved through participation in the Program, so residents in Mendon and surrounding communities are aware of the successes. In fact, several bordering communities have joined the Program based on Mendon's example. Additionally, due to the overlay district created for Criteria 1 and 2, the town is excited about solar development. Mendon is currently working with a solar developer to explore the development of a large solar farm, and the town took advantage of the Solarize Mass program to engage residents in community-wide, private sector solar development.

Both the town of Winthrop and the city of Pittsfield consider the Green Communities Program not only an opportunity for funding, but also a framework for decision making and an umbrella for town-wide sustainability work. In Winthrop, the Program has helped department heads plan improvements with energy efficiency in mind. In Pittsfield, the Program has provided direction for broader efforts. Pittsfield participated in the Solarize Mass program and is now working with local utilities and funders to establish a Powering Pittsfield program to cluster energy efficiency audits in downtown commercial and residential neighborhoods.

When survey respondents were asked to identify all of the reasons they continue to participate in the Program, more than 91 percent indicated a desire to reduce municipal energy use. Additionally, 83 percent of respondents cited an interest in reducing costs and 82 percent an interest in securing state funds. Seven of the ten communities interviewed indicated that the ability to track energy use was a benefit of the Program once municipal data are entered into MEI.

Energy Savings: Spotlight—Medford

Medford was exceeding its 20 percent reduction goal by Year 4 of its ERP, with an overall savings of 239,168 MMBtus over the past four years, which is equivalent to powering and heating 1,854 Massachusetts homes.

Table 2. Reasons Your Community Continues to Participate in the Green Communities Program

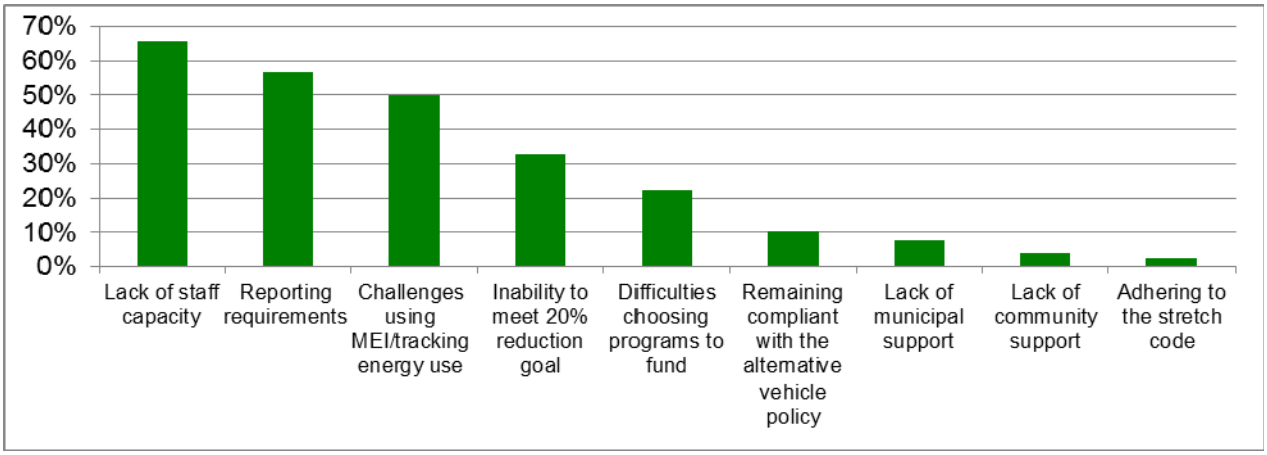
Reason for Participating (All)	Response
To reduce municipal energy use	91%
To reduce costs	83%
To secure state funding	82%
Desire for recognition as a "green" municipality	49%
To reduce greenhouse gas emissions	48%
To provide education/awareness on clean energy and the environment	47%
Encouragement and/or instigation by local citizens and/or Energy Committee	44%
Personal interest of municipal leaders	41%
To improve community health	23%
To spur economic/job creation	9%

Key Program Challenges

- Municipal staff capacity
- Reporting requirements
- Achieving the 20 percent energy use reduction by the end of Year 5

Interviewees and survey respondents were also asked about the challenges of remaining in the Program. Several individuals interviewed, and nearly 66 percent of survey respondents, indicated municipal staff capacity as a primary challenge. Interviewees discussed overburdened municipal staff and the fact that annual reporting requirements exceed the technical knowledge and available time of most volunteers. Fifty-six percent of survey respondents cited challenges with reporting requirements (annual and grant reports), and 50 percent indicated challenges using MEI or other methods of tracking energy usage. One survey respondent said the capacity issue was prohibitive for small towns, and another commented that, due to lack of staff capacity, the majority of the work was done by volunteers who have limited project management knowledge and qualifications. One respondent suggested that MEI trainings should be offered annually. Several said there was uncertainty about how they were going to meet their 20 percent reduction goal and expressed concerns that grant amounts were not significant enough to make the changes necessary to do so. Only three percent of respondents pointed to adherence to the Stretch Code as a primary challenge, despite concerns many have expressed during the designation process. See full response in Figure 1, following.

Figure 1. What challenges have you experienced remaining in the Green Communities Program?



Grant-Funded Projects

When asked about the key benefit of participating in the Program, survey respondents and interviewees alike discussed the cost savings and other benefits associated with specific projects that they had undertaken. A significant portion of the energy reduction that municipalities are able to realize is due to the implementation of Green Communities grant-funded projects.

Nearly half of respondents indicated that their municipality had completed an interior lighting upgrade project, leading to an estimated total of nearly 140 lighting upgrade projects across all grant years. Roughly 42 percent of respondents indicated that their municipalities had completed weatherization/infrastructure upgrade projects, for an estimated total of more than 90 projects across all grant years. Similarly, 42 percent of respondents indicated that their municipalities had completed HVAC upgrade projects, for an estimated 75 projects across all grant years. A list of all project types, as reported by the 87 survey respondents, can be found in Table 3, following.

Diversity of Successful Projects

- Home energy improvements that leveraged Green Communities funds and boosted community interest
- 106 kW PV array at school that has reduced energy costs and teaches students about PV system
- Boiler and lighting replacement projects with quickly realized savings
- Energy management systems for continued use tracking

Table 3. Types of projects completed using your Green Community funds

Project Type	Percent of Municipalities	Estimated number of projects
Interior lighting upgrade	49%	137
Weatherization/infrastructure upgrade	42%	91
HVAC upgrade	42%	75
Boiler upgrade/replacement	40%	66
Energy management system	40%	65
Streetlight upgrade	31%	45
Renewable energy installation	21%	28
Administrative Support	24%	28
Oil to high efficiency gas conversion	20%	25
Vehicle replacement	13%	18
Anti-idling technology	12%	17

In addition to the projects discussed above, seven municipalities indicated that they had energy audits. Five communities reported completing exterior lighting upgrades. Two communities identified at least six completed projects related to variable speed drives and two communities discussed work under an Energy Savings Performance Contract. There were several other specific projects undertaken, such as a hydro feasibility study and energy modeling. A list of projects, as reported by the 87 survey respondents, can be found in **Appendix D**.

Several interviewed communities noted that they had already identified one or two buildings that were their biggest energy users and were able to tackle the inefficiencies in those buildings once designated. Other communities had a list of project types across many municipal buildings and other domains to address, including window replacement, building weatherization, boiler replacement, and street lighting.

Seventy-six percent of the 87 survey respondents leveraged financial support from their local utilities through the Mass Save™ program for at least some of their Green Community-funded projects. As Figure 2 indicates, more than 35 percent of respondents indicated that they received financial support from utilities for most of their projects.

Amherst used Green Community grant funds to replace its conventional streetlights with super-efficient LED technology.

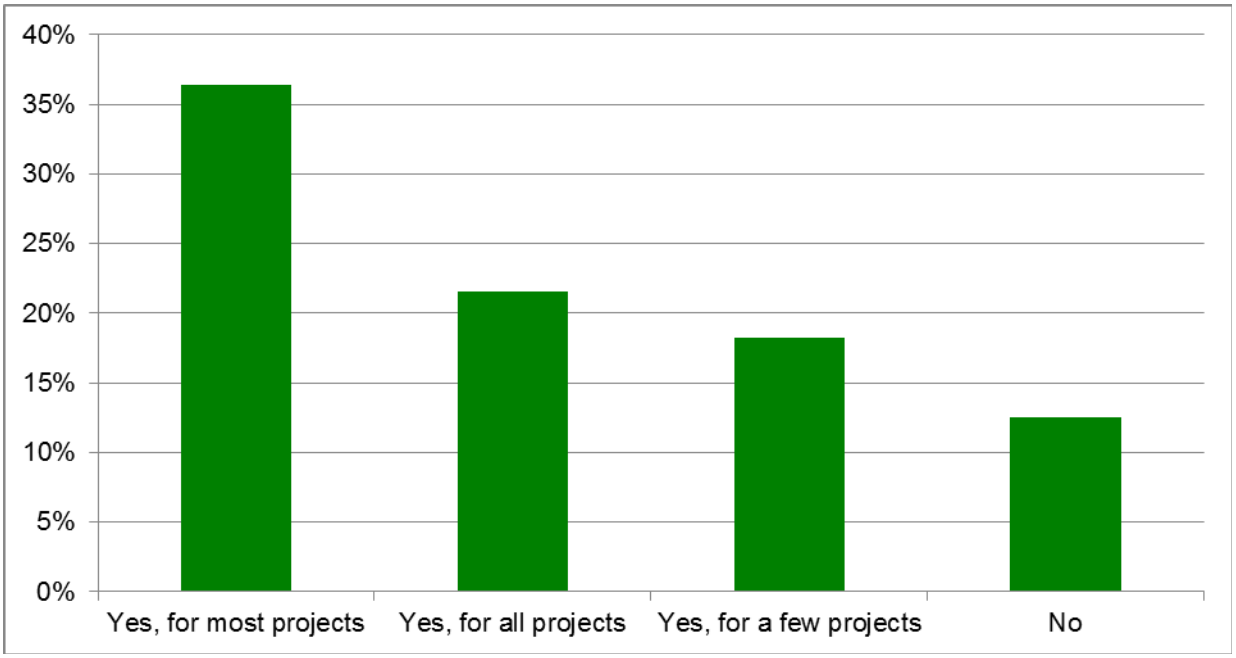
Community Experiences: Grant Funded Projects—*Broader Benefits*

One of Northampton's grant-funded projects not only provides energy and cost savings, but is also an educational opportunity. The energy monitoring and retro-commissioning project at Smith Vocational and Agricultural High School helps the city reduce energy use and greenhouse gas emissions, while serving as a tool to train vocational students in energy monitoring and enhancing their understanding of reducing energy consumption through equipment scheduling and behavior modification.

Community Experiences: Grant Funded Projects—*People Notice*

The results of the Green Communities grant-funded projects have been received with enthusiasm in Bridgewater. After completing upgrades to lighting and heating systems, residents and municipal employees have voiced appreciation that town buildings are more comfortable and provide a better working environment. Moreover, due to grant-funded upgrades at the library, money has been reprogrammed to support other functions. Similarly, in the town of Easton, because of the visibility of LED street lighting upgrades, the Green Communities Program has received broad community support. Projects currently underway are attracting similar attention from the press and residents.

Figure 2. Have you leveraged financial support from your local utility through Mass Save™ for your Green Community-funded project?



Both interviewees and survey respondents acknowledged some challenges using the grants to fund projects. Twenty-two percent of survey respondents mentioned difficulty deciding which projects to fund, and five of the ten communities interviewed felt that the project contracting/procurement process took longer than they had expected. Several communities experienced delays relating to vendors, contracting, or coordinating with utilities about incentives.

Easton installed higher efficiency rooftop units with energy recovery, part of the HVAC system, at the joint police and fire station.

Regarding the usage of the M.G.L. Chapter 25A, Section 14 provision that allows contracting for municipal energy projects under $100,000 through the local utility, the experience of municipalities was fairly evenly split, with the slight majority (53 percent) of survey respondents indicating that they had not used the provision. Of those who had used Section 14, almost all indicated that they would use it again because it simplified the

procurement process and saved time. Only two respondents indicated that they might not use the provision again, noting that the utility incentives were not as impressive as originally anticipated and getting the project started took longer than it would have if they had not gone through the process. Those who had not used the provision responded that they were either not familiar with it, were planning to use it, or have not had the need to use it because they have not funded a project yet.

CRITERION-SPECIFIC REPORT CARD

This section provides a discussion of each criterion associated with the Green Communities Program. It presents overall feedback from interviews and the survey about municipalities' experiences with each criterion, as well as metrics from 96 Annual Reports submitted in 2013 that can be used to benchmark the criterion-specific progress of participating Green Communities.

When asked which criterion was the most challenging to meet during the designation process, 48 percent of respondents named Criterion 3, the establishment of an energy use baseline and reduction strategy. Thirty-two percent of respondents named Criterion 5, the adoption of the Stretch Energy Code, as the most challenging. These findings echo discussions during the interviews related to challenges getting energy usage data loaded into MEI and initial use of the tool, and developing public support for the Stretch Code.

Interestingly, the requirements associated with Criteria 3 and 5 were also deemed the most significant in terms of reducing energy use and increasing overall sustainability in participating communities. Seventy-eight percent of respondents named Criterion 3 as the requirement that had the largest impact on reducing energy use in their community, followed by Criterion 5 at 12 percent. The results were more evenly split in terms of increasing overall sustainability in each community, with 44 percent indicating that Criterion 3 had the largest impact, and 38 percent citing Criterion 5. The table of full results can be found in **Appendix D.**

Criteria 1 & 2: Development Potential

Criteria 1 and 2 require communities to establish as-of-right siting in designated locations for renewable/alternative energy generation, research and development, or manufacturing facilities, and to adopt an expedited application and permit process for energy facilities in these locations. Despite meeting these requirements as part of the Program designation process, nearly 80 percent of respondents indicated that they did not have renewable energy projects or plans to develop them in their Criterion 1 designated zone. Results from the 2013 Annual Report review indicate that 11 municipalities have projects sited and permitted within their designated zones.

Greenfield's solar farm produces electricity equal to 58 percent of the city's total electricity consumption.

Table 4. Communities with Projects Sited in their Criterion 1 Designated Zone

Community	Date	Description
Ashland	2012	Solar
Kingston	2012	Wind
Maynard	2013	Solar
Milton	2012	Wind
Monson	2013	Solar
New Salem	2011	Solar
Palmer	2011	Solar
Provincetown	2013	Solar
Salem	2012	R&D
Scituate	2012	Solar
Sunderland	2012	Solar

According to the 2013 Annual Report, an additional 11 communities have sited renewable energy projects (solar projects 250 kilowatt (kW) or greater were counted) outside their Criterion 1 designated areas.

While Criteria 1 and 2 requirements have not catalyzed significant renewable energy development within the designated zones, a spillover effect of these criteria has been the development of new renewable energy projects *somewhere* within these cities and towns. Several interview respondents indicated that the Green Communities Program acted as an umbrella for other sustainability efforts in the community, including large-scale renewable energy generation (including landfill solar PV) or the community's participation in the residentially-based Solarize Mass Program offered by the Massachusetts Clean Energy Center in cooperation with the Green Communities Division. Fifty of the Green Communities have completed, or are planning, 107 renewable energy projects on municipal property. Solar is the most prevalent technology among these municipal projects, but wind and thermal projects are also included.

Criterion 3: Energy Baseline and Savings

Criterion 3 requires that the community establish an energy use baseline and adopt an ERP to decrease energy use by 20 percent from that baseline after five years of implementing the ERP. Green Communities use energy in a variety of ways, but buildings comprise the largest portion of their use.

Police cruiser outfitted with the Idle Right devices, town of Truro.

It thus follows that Green Communities will have invested the most effort in improving the efficiency of their buildings. As Table 3 on page 15 illustrates, ICF's survey indicated that more than 80 percent of the projects completed with Green Community grant funds have been for building retrofits—from lighting and heating system replacements to energy management systems.

Annual Reports submitted to DOER show that Green Communities have invested overall more than $150 million in energy efficiency projects over the course of the Program so far (Table 5), including through energy savings performance contracts. Utility incentives and Green Community grants make up approximately $31 million of the installed costs. Green Communities are projected to save more than $15 million annually from completion of projects reported in these Annual Reports. These savings will last over multiple years, grow as additional efficiency projects are completed, and be supplemented with additional cost savings from avoided maintenance.

Table 5. Cost and Savings from Energy Efficiency Projects

Green Communities Grant?	Sum of Projected Annual Cost Savings	Sum of Total Installed Cost	Sum of Green Community Grant	Sum of Utility Incentives
Yes	$11,344,063	$113,296,876	$13,090,840	$15,505,265
No	$3,889,924	$45,778,730	–	$3,203,429
Total	$15,233,987	$159,075,606	$13,090,840	$18,708,694

The resulting energy use reductions from all of these energy efficiency projects varies by Green Community, depending upon a number of factors, including a community's energy use profile and its efficiency accomplishments prior to its baseline year. When looking at the progress of municipalities, results are diverse.

Table 6 shows that the range of energy reductions achieved by individual Green Communities is substantial, regardless of their baseline years. Those Green Communities having completed Year 3 of their energy reduction plan report energy usage ranging from an increase of 15 percent to reductions of 40 percent. This range reflects the various circumstances in each of the Green Communities: their energy use profile and staff capacity, as well as the realities of weather impacts on energy usage. Based on responses from the survey, the greatest factor affecting a community's ability to achieve the 20 percent goal appears to be staff capacity. Some communities have full-time staff committed to energy efficiency, while others rely solely on volunteers. Another limiting factor is the ability of the community to communicate with various municipal departments to ensure that all are fully contributing toward the 20 percent reduction goal.

Table 6. Range of Energy Reductions by Year of ERP[2]

ERP Year	Number of Green Communities	Maximum Percent Reduction	Average Percent Reduction	Minimum Percent Reduction
1	93	37.9%	8.1%	-17.3%
2	93	39.4%	7.4%	-35.4%
3	81	48.3%	12.1%	-15.4%
4	61	49.6%	11.7%	-20.7%
5	17	36.0%	15.0%	-13.2%

Energy increases noted may be a temporary bump due to a significantly colder winter that required additional energy usage. In addition, efficiency projects are often accompanied by efforts to address deferred maintenance, which can cause an increase in energy use. For example, efforts to improve a building ventilation system's efficiency will sometimes uncover ventilation that does not operate properly. Although these corrections may increase the energy usage of the building, they can also greatly improve the comfort and productivity of its occupants. Refer to **Appendix E** for a full list of energy reductions for ERP years one through five.

The cumulative energy savings and the resulting reductions in greenhouse gas emissions attributable to Green Communities can be seen in Figure 3. The energy savings from each Green Community is included in the total energy savings for each year it has participated. For example, a Green Community with a 2009 baseline would have reported energy usage for 2010, 2011, and 2012; its energy savings for each year would be included in the total savings for Years 1−3. Thus, the cumulative energy savings illustrated represent both the amount of energy savings per Green Community and the number of Green Communities included.

[2] Some of the counts for Green Communities in this table exceed the number of approved Annual Reports for 2013. All Green Communities with approved energy use data for each year were included in this table (which could exceed the number of approved annual reports).

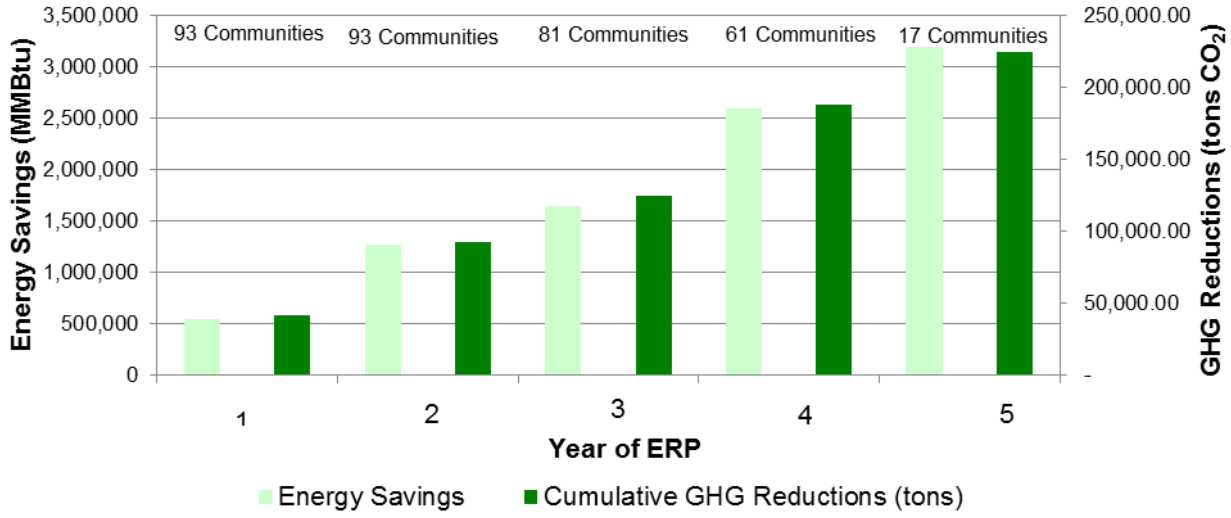
The years shown in this table represent the year of the ERP. Year 1 could represent 2007 to 2011 depending on the selected baseline year, Year 2 could represent 2008 to 2011, and so on.

Some communities saw energy increases during particular years due to a variety of circumstances. Large negative increases may be due to very low baseline usages (i.e. 4 MMBtu) that jumped up due to additional infrastructure (i.e. adding air conditioning).

Energy usage values are as reported by the communities.

Based on data included in the 2013 Annual Reports, 79 Green Communities saw a total energy savings of approximately 3.2 million MMBtu in 2013 alone. This is equivalent to the energy needed to heat and power 24,810 Massachusetts homes for a year.

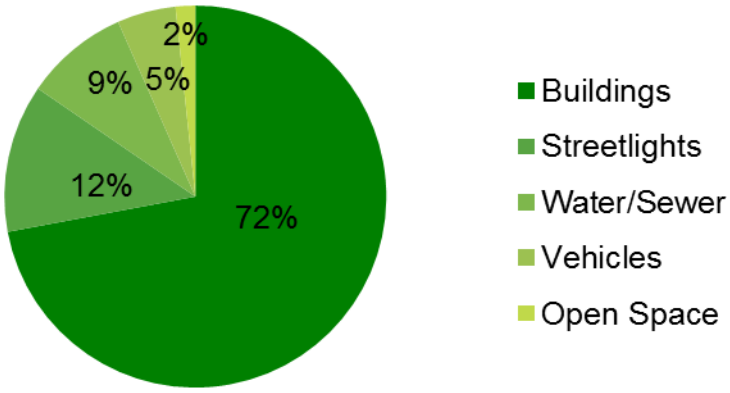
Figure 3. Cumulative Energy Savings and Greenhouse Gas (GHG) Reductions by Year of ERP[3]



[3] Number of communities listed above the bars reflects the number of communities that are in that year of ERP. GHG reductions are estimates that may not fully represent all the energy savings due to lack of conversion factors for certain fuel types and/or changes in conversion factors over the years.

The years shown in this figure represent the year of the ERP. Year 1 could represent 2007 to 2011 depending on the selected baseline year, Year 2 could represent 2008 to 2011, and so on.

Figure 4. Breakdown of Green Communities' Energy Reduction (MMBtu) by Category



The highest energy savings result from ECMs implemented in buildings, followed by streetlights, water and sewer, and vehicles. Water and sewer and open space categories saw the least savings (Figure 4). Since tracking energy usage associated with open space (parking lots and playing fields, for example) is an optional category in MEI, this could account for the significantly lower savings reported by municipalities. The water and sewer category overall showed the fewest ECMs and least energy savings of all the required categories. This is primarily because many of these services and facilities are regionalized for municipalities.

As of this writing, two communities have achieved their 20 percent energy reduction goals following completion of the fifth year of their energy reduction plans (Table 7). For those communities that have not achieved the goal, but have completed their fifth year, the majority have seen significant energy reductions greater than 10 percent. DOER permits Green Communities that have installed energy conservation measures in their fifth year of ERP implementation to achieve the full energy savings from these measures. To ensure this, DOER allows communities to wait a full year after Year 5 before assessing their progress towards the 20 percent energy reduction commitment. Effectively, this means that some communities will achieve their 20 percent reduction after Year 6 and still be considered to have met their designation commitment.

Table 7. Year 5 and Beyond: Green Communities That Have Achieved Their 20 Percent Goals

Community	Year 5
Natick	22.6%
Springfield	24.2%

Criterion 4: FEVs purchased

New electric light duty truck, town of Hatfield.

Criterion 4 requires communities to purchase only fuel-efficient vehicles, where practicable, when adding new vehicles to their fleets. Vehicles that are exempt from the FEV Policy include heavy duty vehicles that have a gross vehicle weight rating (GVWR) of more than 8,500 pounds, as well as police cruisers, passenger vans, and cargo vans. Based on data current as of the 2013 Annual Reports, 36 Green Communities acquired 104 fuel-efficient vehicles in 2013. These non-exempt vehicles have fuel economies ranging from 16 to 95 mpg, with an average fuel economy of 24 mpg. These comprised new purchases, replacement vehicles, and, in a small number of cases, acquisition through drug seizure. The remaining Green Communities either did not expand their fleets in 2013 or only purchased exempt vehicles. For a full list of the new purchases, refer to **Appendix E**.

Green Communities have fleet sizes ranging from 13 to 462 vehicles, with an average of 104. A full list of the fleet sizes of Green Communities, as well as the breakdown of exempt and non-exempt vehicles, can be found in **Appendix E**. On average, non-exempt vehicles make up 18 percent of the total fleets. For most communities, non-exempt vehicles make up less than half the total fleet size. Newton is the exception, with 65 percent of its fleet made up of non-exempt vehicles.

Alternative Compliance

In total, ten reporting communities reported under the Alternative Compliance method for Criterion 4. This compliance option ensures that municipalities that have a vehicle fleet composed entirely of exempt vehicles can still commit to reducing vehicle fuel consumption. The most common Alternative Compliance method reported was idle reduction (seven communities), followed by bike racks (four communities) and carpool programs (two communities). Other methods include park-and-ride facilities or plans to introduce biodiesel and electric-vehicle charging infrastructure. Alternative Compliance municipalities also committed to reporting their annual vehicle miles driven and fuel consumption as part of their Fuel Efficient Vehicle Policy. For example, Northfield reported a vehicle energy use reduction of 6 percent from its baseline year. Several communities are taking innovative approaches, including:

Alternative Compliance: Spotlight—Gill

Gill installed an IdleRight device on a new police cruiser. This device allows the vehicle to park with its warning lights continuously flashing without idling the engine. The town anticipates an annual savings of 117 gallons of gasoline for the cruiser, and plans to install IdleRight devices on five additional police, fire, and highway vehicles.

- Ashfield plans to begin using a biodiesel blend in its diesel vehicles when the Northeast Biodiesel plant under construction in Greenfield is complete.
- In response to a proposal to discontinue the transit bus route that travels up and down Route 63 through Leverett, the town has requested to become a member of the Franklin

Regional Transit Authority and worked with the agency to expand service to include a loop through other parts of the town, rather than limiting it to Route 63.

- Sunderland formed a "Community Pathways" citizens group to encourage more pedestrian and bicycle activity, especially in the Village Center. The group will be seeking financial support from the town's Community Preservation Fund to finance a planning and design study.
- Like many rural municipalities, Shutesbury has experienced difficulties implementing bus service and senior shuttle service. However, the town developed a Med Ride program through the Council on Aging that is open to those in need.

Advanced Vehicle Use

While Criterion 4 focuses specifically on vehicle efficiency, several communities reported alternative fuel and advanced vehicles in their flees. Twenty-seven municipalities include hybrid electric vehicles (HEVs) and four have all-electric vehicle (EV) models in their fleets.

A few municipalities noted their efforts to install electric-vehicle charging stations, specifically through the Massachusetts Department of Environmental Protection's Massachusetts Electric Vehicle Incentive Program (MassEVIP). For example, Beverly received $45,000 in grant funding to install a charging station and five EVs or HEVs. Brookline and Salem operate four and eight charging stations, respectively.

Advanced Vehicle Use: Spotlight—Boston

The city of Boston is leading the way with 90 HEVs, over 20 EVs, one plug-in hybrid electric (PHEV) vehicle, one bi-fuel compressed natural gas vehicle, and over 85 E85-capable flexible fuel models.

Criterion 5: Minimize life-cycle energy costs for new construction

Criterion 5 requires communities to set requirements to minimize life-cycle energy costs for new construction. The only approach cities and towns have followed to achieve this is to date is adoption of the BBRS Stretch Code. Based on data current as of the 2013 Annual Reports, 1,423 new residential projects that received their Certificate of Occupancy in Green Communities in 2013 conform to the Stretch Code. These projects saw HERS ratings ranging from 28 to 70, with the majority of communities averaging in the 50s and 60s. Residential renovation projects were the most prevalent, numbering in 3,753. Four-hundred seventeen commercial projects were built in 2013. The full list of projects built to the Stretch Code in 2013 can be found in **Appendix E**.

Roughly half the municipalities reported in their 2013 Annual Reports that complying with the Stretch Code has not been a significant hurdle. That said, community buy-in, particularly within the builder community, remains challenging in some areas. While in several communities building inspectors have raised concerns that the HERS rater analysis is not rigorous enough, builders in some municipalities have commented that there are additional costs, associated with HERS raters and compliance, as well as project delays due to the added requirements. DOER's analysis has shown, however, that any additional costs do not impede home construction or

sales. DOER points to a study conducted of home sales[4] from 2007−2012 by state university professors in California, which found that homes labeled as efficient with HERS ratings sold for 9 percent more than average similar homes—well above the cost of the "green" features. Green Communities Annual Reports indicate a need for additional education for builders and residents about the benefits of building to these regulations. In addition, separate from comments about costs, several survey respondents mentioned community concerns related to the tightness of buildings and indoor air quality.

[4] *The Value of Green Labels in the California Housing Market*, UCLA Institute of the Environment and Sustainability. http://www.environment.ucla.edu/newsroom/the-value-of-green-labels-in-the-california-housing-market/

PROGRAM FEEDBACK

Through the interview and survey process, participating municipalities provided feedback about ways in which the Program could improve. Nearly 20 percent of survey respondents indicated that the Program is running optimally and they do not have any further suggestions. From those who provided feedback, several key themes emerged:

1. Technical assistance with reporting or reduction in requirements;
2. Increased flexibility and frequency of funding;
3. Project planning and execution support;
4. More communication from DOER related to expectations and lessons learned.

In terms of Program reporting, nearly 40 percent of survey responses indicated that reporting requirements were justified. Given the staff capacity issues in many municipalities, however, many did express a desire for additional technical assistance such as support from an Energy Manager. Most of the desired capacity was for support associated with energy use reporting (using the MEI tool) however there was some interest expressed for additional support associated with Stretch Code and Vehicle Fleet reporting. During the interview process, several participants suggested that each community should receive the annual reporting template and tables upon designation so they can reach out to relevant departments and let them know what will be required for building and vehicle reporting. Several survey responses indicated a need for more technical assistance with project planning and execution. Support selecting projects and navigating project implementation (e.g. support with contractors and utilities) is needed, they said.

Several municipalities indicated a desire for greater flexibility in terms of the types of projects that could be funded and the funding frequency and value. There was interest in broadening the flexibility in the grant opportunities for hybrid vehicles, real-time data monitoring and diagnostic software, and energy audits.

Lastly, while the vast majority of survey respondents and those interviewed spoke of the valuable support they get from their RCs and the overall ease of participating in the Program, a few voiced an interest in more communication from DOER. For example, two survey respondents asked for more advance information about upcoming grant rounds, including funding amounts (especially with regard to the initial round), and a handful of respondents requested additional guidance from DOER about what communities should do if they are not able to meet the 20 percent municipal energy consumption reduction goal. Additionally, several respondents asked for more information about best practices from other communities across the Program. (It is important to note that, having heard this from municipalities previously, the Green Communities Division has provided cities and towns opportunities to share best practices through regional and statewide municipal energy conferences and development of a municipal energy online community—the Massachusetts Municipal Energy Group (MMEG).)

COMMUNITY SPOTLIGHTS

This section provides case studies of five participating municipalities. It profiles their experience with the Program, including their impetus for joining the Program, greatest successes and some challenges. Specifically, ICF tried to highlight themes, as relevant, that were raised by multiple communities during the interview and survey outreach. The experiences of these five communities and their participation in the Green Communities Program provide a deeper understanding to the findings elsewhere in this report.

City of Medford

The city of Medford became a Green Community during the first designation round in May of 2010. Medford saw becoming a Green Community as an opportunity to meet several of its goals: setting an example for residents, accessing emerging opportunities for energy efficiency, and a means of leveraging additional funding for sustainability projects and programs in the city. Mayor Michael J. McGlynn often states that going 'green' is an addiction. "Once you start, you just cannot stop." Medford recognized that many of the requirements to be designated a Green Community were steps that the city had taken or wanted to take, such as adopting the Stretch Code and creating a plan to reduce municipal energy usage. The Program provided assistance in taking these steps and helped with funding to meet the city's energy reduction goals. Being a Green Community is an identifiable badge that projects an identity externally while creating the necessary internal leverage to ensure sustainable practices and program compliance throughout the community. Green Community status also attracts the attention of other funding opportunities. The U.S. Department of Energy recently contacted Medford about being involved in the Better Building Challenge.

Overall, the city has completed 25 Green Community-funded projects, for a total projected annual energy savings of 974,419 kilowatt hours (kWh), which is equivalent to powering and heating 128 Massachusetts homes or, in greenhouse gas reduction terms, removing 83 cars from the road. Key projects include 16 lighting upgrades at various municipal buildings and schools, a hot water heater conversion at the high school and an oil-to-high efficiency gas conversion and HVAC system upgrades at a city-owned theater. For these projects and others, Medford has worked closely with local utilities to leverage additional funds and tax credits. As of this writing, Medford was exceeding its 20 percent reduction goal, with an overall savings of 239,168 MMBtus of savings over the past four years, which is equivalent to powering and heating 1,854 Massachusetts homes. Despite overall success with the Program, Medford has experienced some challenges getting the grant-funded projects completed due to vendor issues, including higher than expected consultant price quotes, and unresponsive contractors. In the future, the city plans to assemble a series of smaller-effort projects to avoid putting a project out to bid in favor of working with a utility-selected project expeditor.

Hot water heater control panel installed in Medford.

According to Medford's Energy Efficiency Coordinator, one of the key benefits of participating in the Program is being able to share experiences with energy managers in other municipalities. She credits the quarterly meetings hosted by DOER's Northeast Regional Coordinator with establishing this connection. And, while staff capacity has not been a significant issue in completing the Program requirements and utilizing the grant funding due to having a full-time Energy Efficiency Coordinator, having a facility manager to cover the municipal buildings (such as Medford has for its schools) would be very valuable to support building-specific energy management.

Town of Winchester

The town of Winchester became a Green Community in December of 2010 (Round 2). The town had an established volunteer-based Energy Management Committee as well as active local "green" organizations Cool Winchester and Sustainable Winchester prior to the launch of the Green Communities Program. In part because of the town's existing efforts around sustainability, the municipal government was supportive of the town becoming a Green Community.

Variable frequency drives (VFDs) installed at Winchester High School.

Being an early round Green Community has allowed Winchester to embrace the image of a "green leader" and has generated further enthusiasm for other sustainability efforts, such as participation in Solarize Mass[5], an increased interest in the farmers markets and support for farmland conservation. According to the Energy Conservation Coordinator, "the Green Communities Program helped Winchester reduce energy costs that had been a real budget buster." The town has very little commercial tax base and a growing school population, so energy use reduction was identified as a real opportunity to save money. In addition to leveraging the Green Community's grant funding for energy-savings projects, Winchester has established an energy revolving fund that supports municipal upgrades without using any taxpayer funds. The fund is supported by an energy surcharge on municipal building rentals. According to the Energy Conservation Coordinator, this fund is a useful tool to make improvements that save the town money without spending municipal dollars.

Winchester's biggest challenge participating in the Program is ensuring it will meet the 20 percent energy usage reduction goal given the significant energy use reductions the town had made prior to involvement with the Program, coupled with the growing square footage of municipal space.

[5] Solarize Mass Program website, http://www.masscec.com/solarizemass

The town is strategic about using grant funding to support projects that will ensure a cost benefit and then reinvesting the savings into future efforts. Grant-funded projects are developed in partnership with the municipal facilities team and local utility companies prior to applying for Green Communities funding. All of the projects thus far have received some utility funding. A few of Winchester's key projects include lighting sensors in municipal buildings and schools, carbon dioxide sensors in the gyms, and energy management systems (EMS) in the library and the Middle School. Winchester has also installed variable frequency drives in large fan and pump motors. The town has set aggressive energy targets for the energy management systems, and is hoping to participate in a Metropolitan Area Planning Council group purchase for its streetlights. Overall, Winchester cites roughly $890,000 in annual avoided costs associated with energy reduction projects supported by the Green Communities Program and other related energy reduction efforts. The town estimates a savings of $4.9 million since 2005. The town currently uses roughly 35 percent less energy than in 2005, despite an additional 50,000 square feet of building space.

Town of Ashfield

The town of Ashfield became a Green Community in December of 2011 (Round 4). To support the designation process, the chair of the Select Board recruited community members to form an Energy Committee. This all-volunteer committee is now responsible for managing the town's grant-funded projects and for annual reporting to DOER. To handle the significant time commitment involved in managing projects and annual reporting, the town applied for and was awarded a Green Communities Energy Manager grant. Further support for that position will come from the realized energy savings of implemented projects.

One key benefit of Ashfield's participation in the Program is the availability of grant funding to initiate energy efficiency projects. Prior to the town's participation in the Green Communities Designation and Grant Program, the town was not actively involved in energy savings initiatives. Since Ashfield's designation, however, the town has completed projects at several municipal buildings, including four energy assessments; wall, foundation and ceiling insulation; heating system modernization projects; and a project at the wastewater treatment facility. The town sewer commission, library trustees, and building committee have all been able to leverage Program funds to make energy improvements, and Ashfield has completed lighting retrofits at three municipal buildings with utility support. Lastly, the town replaced an old commercial refrigerator at its fire department. At Year 3 of Program participation, Ashfield had achieved a 5.5 percent municipal energy use reduction, saving 570 MMBtus.

Excavated crawl space under the Ashfield Town Hall with foundation insulated and sealed up.

After some initial challenges getting its fuel data loaded into MassEnergyInsight (MEI), Ashfield has had great success using the tool. For example, the Energy Committee noticed a significant spike in energy use in December. After an investigation, it was able to identify

its incandescent Christmas lights as a major source of inefficiency and replaced them with LED lights. Access to this near-term data helped the town realize significant energy cost savings. An evaluation of MEI data also indicated that roughly 50 percent of the town's energy use is from vehicle fuel usage. This is primarily due to the Highway Department's use of heavy-duty vehicles needed to maintain 70 miles of roads. This energy use mix poses a challenge for Ashfield, since most heavy-duty vehicles are not available in hybrid or electric models.

Town of Sutton

Solar array at Simonian Center for Early Learning in Sutton.

The town of Sutton became a Green Community in July of 2011 (Round 3). According to the Planning Director, who currently manages the town's Green Communities Program, "the town as a whole really believes that a focus on renewable energy is important to long term sustainability" and participation in the Green Communities Program has given Sutton the financial push to pursue significant solar PV projects. The town installed a 200,000 kW solar array on its elementary school and a 100,000 kW array as part of the middle/high school renovation. In addition, Sutton has roughly 80 kW of solar capacity spread among three other municipal buildings. The towns of Millbury and Sutton partnered to host an Energy Fair as part of their participation in the Solarize Mass solar incentive initiative, and assisted numerous homeowners with reduced cost solar installations. The Energy Fair drew a crowd of over 200 residents from Sutton and neighboring Millbury and resulted in the installation of more than 20 residential systems. Town Administrator James Smith commented, "reducing the town's carbon footprint has always been one of our goals, but saving money at the same time is the ideal situation."

The town has had significant success using Mass Energy Insight (MEI) to track the community's energy use and the Planning Director checks MEI every quarter to ensure that Sutton continues to make progress. Sutton has easily identified projects to fund with Green Communities grants, and the town staff are well versed in the public procurement process. Of all the criteria, the Stretch Code was the most significant hurdle Sutton experienced during designation, and the building department continues to have challenges ensuring all of the needed information is properly reported.

Sutton's key projects include major interior lighting and occupancy and daylight sensor upgrades at the schools, a heat recovery system at Town Hall and a feasibility study to install hydro power in the community. The lighting upgrades translated into estimated energy savings of nearly 118,000 kilowatt hours annually, or more than $17,000 in estimated annual energy costs. With several energy efficiency projects completed, Sutton is currently on its way to exceeding its 20 percent reduction goal, with an overall savings of 48,190 MMBtus over the past four years. The town is now focused on efforts to institute behavior change to support additional energy use reductions. This includes reminding occupants to turn off lights and working with

department heads to identify other ways to save energy. According to the Planning Director, "transitioning to renewable energy is good, but reducing our overall use is even better."

Town of Bridgewater

Exterior lighting upgrade at Bridgewater Police Station.

The town of Bridgewater became a Green Community in December of 2011 (Round 4). Bridgewater was motivated to become a Green Community to both reduce energy consumption and address increasingly high municipal energy costs in a time of tight municipal budgets. The town is very motivated to realize the cost and energy savings brought about by the Green Communities Program requirements. At the time of the 2013 Annual Report, Bridgewater had realized a nearly four percent energy savings, or the equivalent of roughly 7,400 MMBtus, since designation. This is equivalent to powering and heating approximately 57 Massachusetts homes. This savings does not account for the energy efficiency projects funded by the town's Green Community designation grant, which were still ongoing in 2014. Not only is there enthusiasm about the savings from the grant-funded projects, but the Building Commissioner is very supportive of the Stretch Code requirements as it supports his goal of reducing energy use in homes. The town appointed an Energy Committee in 2008 to help access energy reduction grants and planning support. The Energy Committee led the town's effort to become a Green Community, initially working under a DOER Green Community Planning Assistance Grant to complete its application. The town also hired a consultant to manage the designation process and prepare the initial grant application. Due to municipal staff capacity constraints, the chair of the Energy Committee, a resident volunteer, is currently responsible for the bulk of the annual reporting.

The key challenge that Bridgewater experienced under the Green Community Program is related to implementing the grant-funded projects. The town had difficulties with the energy audits of eight town buildings conducted by a vendor it had hired, including that the vendor's initial cost assessment did not include municipally-relevant payback periods or utility incentives and rebates. The town worked with its Green Communities Regional Coordinator to identify a second firm that was able to conduct the audits and complete the recommended upgrades. The program-associated data tracking has been a minor hurdle for the town, particularly related to access to and entry of town-managed energy use data into the MEI tool. In addition, the town did not anticipate the detailed in-house record keeping required by the Annual Report.

Overall, the town has completed six energy efficiency projects, three at the police station, two at the public library, and one at the fire substation, for a total projected annual energy savings of 136,212 kWhs. This is equivalent to powering 18 Massachusetts homes or, in

greenhouse gas reduction terms, removing 12 cars from the road. According to the Town Planner and Energy Committee Chair, “the police are delighted with the upgrades because of an increase in the comfort of the building, and dramatic reductions in energy use.” Furthermore, the upgrade to the building’s heating and cooling system has been received with enthusiasm by members of the community who conduct committee meetings in the training room. Moreover, due to grant-funded upgrades at the library, the library director has been able reprogram funds to support other critical library functions.

CONCLUSION

The Green Communities Act was passed by unanimous vote of the Legislature in 2008 and it continues to enjoy strong legislative support. A key component of the Act, the Green Communities Designation and Grant Program has significantly outpaced expectations and is now a national model for clean energy success at the local level. Beginning in 2010 with 35 communities achieving designation, there are currently 123 designated communities. Forty-eight percent of the state's residents live in Green Communities that range geographically from the Cape and Islands to the Berkshires, and demographically from the tiny western Massachusetts town of Rowe to the state capital in Boston.

"Massachusetts' clean energy revolution continues its momentum in large part because of leadership at the local level," said Massachusetts Energy Undersecretary Mark Sylvia.

The 123 Green Communities have committed to reduce their municipal energy usage over five years by 20 percent, or 1.94 million MMBTU—an amount equal to the total average energy use of more than 15,000 Massachusetts homes. This five-year commitment is also projected to cut greenhouse gas emissions by 180,375 tons, which equates to taking nearly 34,000 cars off the road for a year. It also equates to more than $20 million in avoided energy costs if all the current Green Communities meet their 20 percent energy use reduction commitments.

Northampton is a designated Green Community.

As of December 2013, Green Communities reported using their designation or competitive grants to complete nearly 140 lighting upgrade projects, more than 90 weatherization projects, and 75 HVAC upgrade projects. While there has been a diversity of project types undertaken with the grant funding, from HVAC system replacement and the installation of energy management systems at municipal buildings to solar projects, nearly 50 percent of survey respondents stated that their community had completed an interior lighting upgrade project. Individual participating communities have implemented anywhere from one to 413 energy conservation measures (ECMs), with an average of 32 ECMs per community. In 2013, 79 Green Communities submitted Annual Reports to DOER and, based on their reported data, are cumulatively saving approximately 3.2 million MMBtu—equivalent to the total energy usage of 24,810 Massachusetts homes.

Since the Program launched in 2010, the Green Communities Division has awarded some $38 million in grants to designated communities to undertake projects that reduce municipal energy bills and improve the local environment. Moreover, Program participants have been able to

combine Green Communities monies with local utility funding to get an even greater benefit. Seventy-six percent of survey respondents leveraged financial support from their local utilities through the Mass Save™ program for at least some of their Green Community-funded projects. Utility incentives and Green Community grants make up approximately $31 million of the installed costs associated with these projects.

Participating municipalities, both those surveyed as well as those interviewed, were overwhelmingly positive about their experiences with the Green Communities Program. Reducing municipal energy use, securing state funds, and reducing costs are the key reasons communities are interested in participating. Survey and interview respondents cited the hands-on support provided by the Regional Coordinators as a vital contributor to the Program's success. In addition, they voiced appreciation for valuable peer information exchanges between participating communities facilitated by the Division.

Several individuals interviewed, and nearly 66 percent of survey respondents, indicated municipal staff capacity as a primary challenge in participating in the Program. The Green Communities Division addressed this concern in late 2013 by offering grant funding for all Massachusetts cities and towns, regardless of their Green Communities status, to support additional staff capacity to identify, organize, fund, implement and monitor energy efficiency and renewable energy projects and to initiate and lead local energy education efforts. In the spring of 2014, DOER announced the approval of 28 Energy Manager grants serving 36 municipalities.

Looking ahead, the Division anticipates designating more than a dozen additional Green Communities in the fall 2014 designation round. With funding secured through Alternative Compliance Payments under the state's Renewable Portfolio Standard and carbon allowance auction proceeds under the Regional Greenhouse Gas Initiative, the Program is poised to continue to support and advance the clean energy goals of Massachusetts municipalities well into the foreseeable future.

APPENDIX A: INTERVIEW GUIDE

Green Communities Program Outreach Interview Guide

ICF International—February 2014

Background Information for Interviews

- **Background of Study:**
  - ICF International was contracted by DOER to conduct a Progress Report of the Green Communities Program
  - Objectives of the study include:
    - Prepare a progress report of the Green Communities Program, including data on overall program trends, including energy savings (criterion 3) as well as alternative vehicle and stretch code participation rates across participating communities.
    - Through interviews and survey, understand common successes and challenges experienced by participating municipalities during each phase of the Program; becoming a Green Community, spending the grant monies, remaining in the Program.
    - Present case studies of several participating communities to highlight findings.

- **Goal of the Interviews:**
  - Probe specific aspects of each program phase as well as each criterion to understand common successes, benefits and challenges.
  - Capture specific content that can inform the creation of a survey instrument for similar feedback from other participating municipalities.

Proposed Questions for Interviews

PERSONAL INFORMATION

1. Tell us about your role/position within your community.
2. Were you involved in your community's designation process? Who else supported the effort (i.e. volunteers, etc.)?
3. Are you responsible for completing your community's Annual Report? Who else supports that effort (i.e. volunteers, etc.)?

PROGRAM SUCCESSES/BENEFITS

1. Please describe some of the successes/benefits that your community has experienced by participating in the Green Communities Program.
    - What have been the benefits of becoming a Green Community?
    - Can you describe some of the successes experienced because of the grant funding?
    - Can you describe some of the benefits you have experienced remaining in the Program?

PROGRAM CHALLENGES

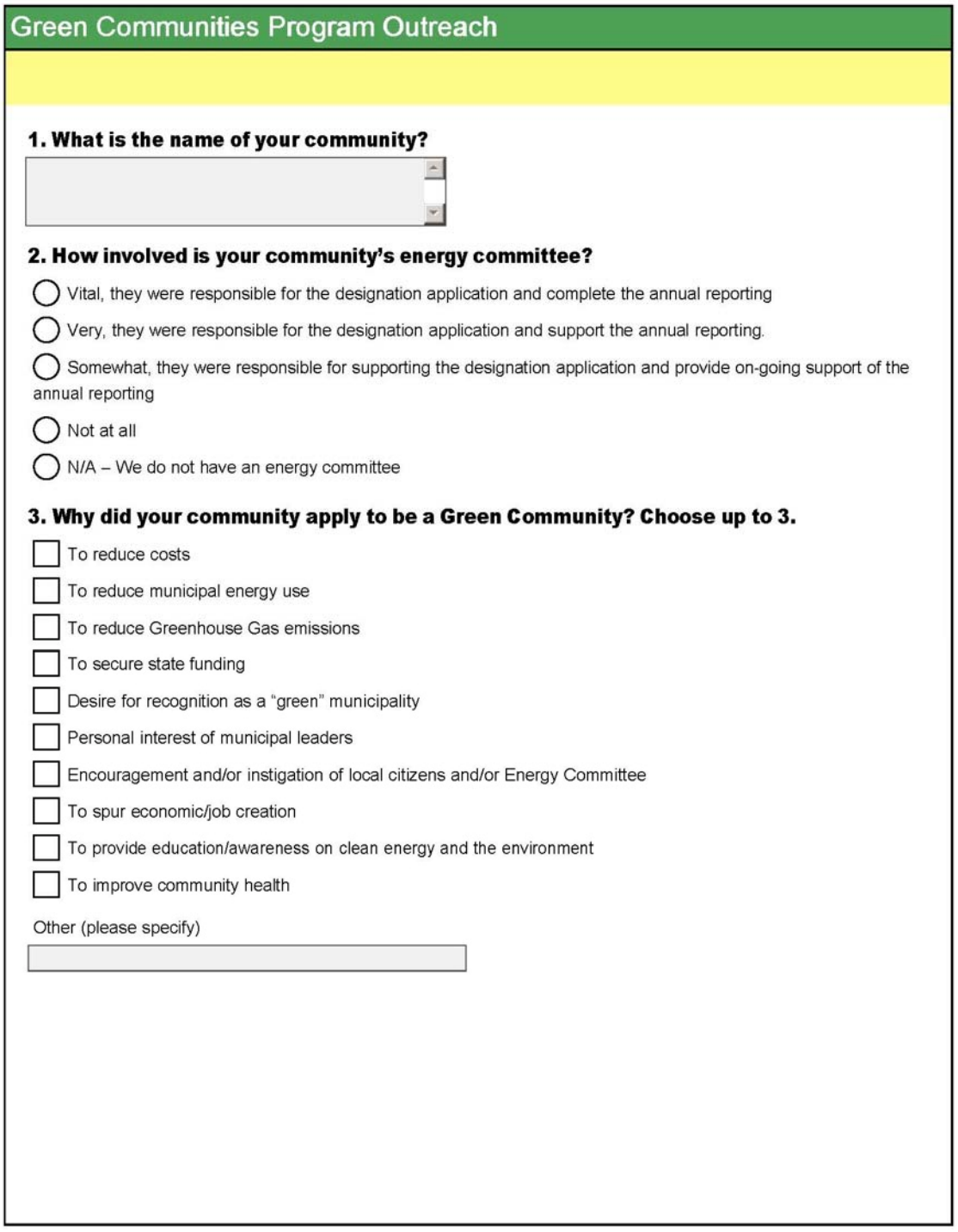
2. Please describe some of the challenges that your community has experienced by participating in the Green Communities Program.
    - What were some of the challenges of becoming a Green Community?
    - Can you describe some of the challenges you have experienced spending the grant funding?
    - Can you describe some of the challenges you have experienced remaining in the Program? And specifically related to the annual reporting requirements?

APPENDIX B: INTERVIEW PARTICIPANTS

Communities participating in the Interview Process.

Municipality
Ashfield
Bridgewater
Easton
Medford
Mendon
Northampton
Pittsfield
Sutton
Winchester
Winthrop

APPENDIX C: SURVEY INSTRUMENT



Green Communities Program Outreach

1. What is the name of your community?

2. How involved is your community's energy committee?

- ◯ Vital, they were responsible for the designation application and complete the annual reporting
- ◯ Very, they were responsible for the designation application and support the annual reporting.
- ◯ Somewhat, they were responsible for supporting the designation application and provide on-going support of the annual reporting
- ◯ Not at all
- ◯ N/A – We do not have an energy committee

3. Why did your community apply to be a Green Community? Choose up to 3.

- ☐ To reduce costs
- ☐ To reduce municipal energy use
- ☐ To reduce Greenhouse Gas emissions
- ☐ To secure state funding
- ☐ Desire for recognition as a "green" municipality
- ☐ Personal interest of municipal leaders
- ☐ Encouragement and/or instigation of local citizens and/or Energy Committee
- ☐ To spur economic/job creation
- ☐ To provide education/awareness on clean energy and the environment
- ☐ To improve community health

Other (please specify)

Page 1

Green Communities Program Outreach

4. During the designation process, which criterion was the most challenging for your community to meet?

- ◯ As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)
- ◯ 20% energy use reduction in 5 years (Criteria 3)
- ◯ Fuel efficient vehicle policy (Criterion 4)
- ◯ Stretch Code (Criterion 5)
- ◯ N/A

5. How effective has the Green Communities program been in helping your community address energy use and climate change?

◯ Highly effective ◯ Between highly and average in effectiveness ◯ Average effectiveness ◯ Between average and not effective ◯ Not effective

6. Why does your community continue to participate in the Green Community program? Select all that apply.

- ☐ To reduce costs
- ☐ To reduce municipal energy use
- ☐ To reduce Greenhouse Gas emissions
- ☐ To secure state funding
- ☐ Desire for recognition as a "green" municipality?
- ☐ Personal interest of municipal leaders
- ☐ Encouragement and/or instigation of local citizens and/or Energy Committee
- ☐ To spur economic/job creation
- ☐ To provide education/awareness on clean energy and the environment
- ☐ To improve community health

Other (please specify)

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Green Communities Program Outreach

7. What types of projects have you completed using your Green Community funds? Select all that apply and indicate the number of projects completed.

	1	2	3	4	5+
Weatherization/infrastructure upgrade	○	○	○	○	○
HVAC upgrade	○	○	○	○	○
Energy management system	○	○	○	○	○
Street light upgrade	○	○	○	○	○
Interior lighting upgrade	○	○	○	○	○
Renewable energy installation	○	○	○	○	○
Oil to gas conversion	○	○	○	○	○
Boiler upgrade/replacement	○	○	○	○	○
Vehicle replacement	○	○	○	○	○
Anti-idling technology	○	○	○	○	○
Administrative Support	○	○	○	○	○

Other (please specify)

8. What challenges have you experienced remaining in the Green Communities program? Select all that apply.

- ☐ Lack of staff capacity
- ☐ reporting requirements (annual and grant reports)
- ☐ Lack of community support
- ☐ Lack of municipal support
- ☐ Challenges using MEI or otherwise tracking energy use related to Criterion 3
- ☐ Inability to meet 20% reduction goal
- ☐ Difficulties choosing programs to fund
- ☐ Remaining compliant with the alternative vehicle policy
- ☐ Adhering to the stretch code

Other (please specify)

Page 3

Green Communities Program Outreach

9. Have you leveraged financial support from your local utility through Mass Save for your Green Communities-funded projects?

- ◯ Yes, for all projects
- ◯ Yes, for most projects
- ◯ Yes, for a few projects
- ◯ No
- ◯ N/A

10. Have you used the Chapter 25A Section 14 $100,000 provision to contract for municipal energy projects through your utility?

☐

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Green Communities Program Outreach

9. Have you leveraged financial support from your local utility through Mass Save for your Green Communities-funded projects?

- ◯ Yes, for all projects
- ◯ Yes, for most projects
- ◯ Yes, for a few projects
- ◯ No
- ◯ N/A

10. Have you used the Chapter 25A Section 14 $100,000 provision to contract for municipal energy projects through your utility?

☐

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Green Communities Program Outreach

If Yes

11. Would you use this process again? Why?

Page 5

Green Communities Program Outreach

If No

12. Why not?

Page 6

Green Communities Program Outreach

13. Which criterion's requirement has had the largest impact on reducing energy use in your municipality?

- ◯ As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)
- ◯ 20% energy use reduction in 5 years (Criteria 3)
- ◯ Fuel efficient vehicle policy (Criterion 4)
- ◯ Stretch Code (Criterion 5)
- ◯ N/A

14. Which criterion's requirement has had the largest impact on increasing overall sustainability throughout the community?

- ◯ As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)
- ◯ 20% energy use reduction in 5 years (Criteria 3)
- ◯ Fuel efficient vehicle policy (Criterion 4)
- ◯ Stretch Code (Criterion 5)
- ◯ N/A

15. Do you have any projects or concrete plans to develop a project in your Criterion 1 R&D/Manufacturing zoned area?

☐

16. Please describe your most successful project(s) funded through the Green Communities program, and why it is considered successful.

17. How would you improve the Division's implementation of the Green Communities Designation and Grant program?

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APPENDIX D: FULL SURVEY RESPONSES

Question 1: The survey received 87 responses from 84 communities. There were two responders from Carlisle, Chelmsford and Leverett.

Table D-1. Responding Communities

Municipality		
Acushnet	Hanover	Plympton
Amherst	Harvard	Provincetown
Andover	Hatfield	Quincy
Arlington	Hopkinton	Richmond
Ashby	Kingston	Rowe
Ashfield	Lakeville	Scituate
Auburn	Lancaster	Sherborn
Ayer	Lenox	Shirley
Barre	Leverett	Springfield
Bedford	Lexington	Sudbury
Belchertown	Lunenburg	Sutton
Berlin	Manchester-by-the-Sea	Swampscott
Blackstone	Marlborough	Tewksbury
Boston	Maynard	Topsfield
Bridgewater	Medway	Townsend
Brookline	Melrose	Truro
Cambridge	Mendon	Watertown
Carlisle	Middlefield	Wendell
Chelmsford	Millbury	West Newbury
Chesterfield	Milton	West Tisbury
Conway	Montague	Westford
Dedham	Natick	Westminster
Easthampton	Newton	Whately
Easton	Northampton	Williamsburg
Gill	Palmer	Williamstown
Gloucester	Pelham	Winchester
Granby	Petersham	Winthrop
Greenfield	Pittsfield	Worcester

Question 2: How involved is your community's energy committee?

Answer Options	Response Percent	Response Count
Vital, they were responsible for the designation application and complete the annual reporting	27.6%	24
Very, they were responsible for the designation application and support the annual reporting.	27.6%	24
Somewhat, they were responsible for supporting the designation application and provide on-going support of the annual reporting	29.9%	26
Not at all	5.7%	5
N/A—We do not have an energy committee	9.2%	8
answered question		**87**
skipped question		**1**

Question 3: Why did your community apply to be a Green Community? Choose up to 3.

Answer Options	Response Percent	Response Count
To reduce costs	52.3%	46
To reduce municipal energy use	80.7%	71
To reduce greenhouse gas emissions	28.4%	25
To secure state funding	63.6%	56
Desire for recognition as a "green" municipality	30.7%	27
Personal interest of municipal leaders	18.2%	16
Encouragement and/or instigation by local citizens and/or Energy Committee	28.4%	25
To spur economic/job creation	0.0%	0
To provide education/awareness on clean energy and the environment	12.5%	11
To improve community health	1.1%	1
Other (please specify)		2
answered question		**88**
skipped question		**0**

Question 4: During the designation process, which criterion was the most challenging for your community to meet?

Answer Options	Response Percent	Response Count
As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)	6.8%	6
20% energy use reduction in 5 years (Criterion 3)	47.7%	42
Fuel efficient vehicle policy (Criterion 4)	9.1%	8
Stretch Code (Criterion 5)	31.8%	28
N/A	4.5%	4
answered question		**88**
skipped question		**0**

Question 5: How effective has the Green Communities Program been in helping your community address energy use and climate change?

Answer Options	Response Percent	Response Count
Highly effective	37.9%	33
Between highly and average in effectiveness	37.9%	33
Average effectiveness	19.5%	17
Between average and not effective	4.6%	4
Not effective	0.0%	0
answered question		**87**
skipped question		**1**

Question 6: Why does your community continue to participate in the Green Community Program? Select all that apply.

Answer Options	Response Percent	Response Count
To reduce costs	82.8%	72
To reduce municipal energy use	90.8%	79
To reduce greenhouse gas emissions	48.3%	42
To secure state funding	81.6%	71
Desire for recognition as a “green” municipality?	49.4%	43
Personal interest of municipal leaders	41.4%	36
Encouragement and/or instigation by local citizens and/or Energy Committee	43.7%	38
To spur economic/job creation	9.2%	8
To provide education/awareness on clean energy and the environment	47.1%	41
To improve community health	23.0%	20
Other (please specify)		3
answered question		**87**
skipped question		**1**

Question 7: What types of projects have you completed using your Green Community funds? Select all that apply and indicate the number of projects completed.

Answer Options	1	2	3	4	5+	Response Count
Weatherization/infrastructure upgrade	12	7	8	4	5	36
HVAC upgrade	16	9	5	4	2	36
Energy management system	16	9	7	0	2	34
Street light upgrade	15	7	2	0	2	26
Interior lighting upgrade	9	7	5	6	15	42
Renewable energy installation	13	3	0	1	1	18
Oil to gas conversion	14	0	2	0	1	17
Boiler upgrade/replacement	20	3	6	3	2	34
Vehicle replacement	7	3	0	0	1	11
Anti-idling technology	7	1	1	0	1	10
Administrative Support	15	4	0	0	1	20
Other (please specify)						31
					answered question	**73**
					skipped question	**15**

Question 8: What challenges have you experienced remaining in the Green Communities Program? Select all that apply.

Answer Options	Response Percent	Response Count
Lack of staff capacity	65.8%	50
Reporting requirements (annual and grant reports)	56.6%	43
Lack of community support	3.9%	3
Lack of municipal support	7.9%	6
Challenges using MEI or otherwise tracking energy use related to Criterion 3	50.0%	38
Inability to meet 20% reduction goal	32.9%	25
Difficulties choosing programs to fund	22.4%	17
Remaining compliant with the alternative vehicle policy	10.5%	8
Adhering to the stretch code	2.6%	2
Other (please specify)		20
	answered question	**76**
	skipped question	**12**

Question 9: Have you leveraged financial support from your local utility through Mass Save™ for your Green Communities-funded projects?

Answer Options	Response Percent	Response Count
Yes, for all projects	21.6%	19
Yes, for most projects	36.4%	32
Yes, for a few projects	18.2%	16
No	12.5%	11
N/A	11.4%	10
answered question		**88**
skipped question		**0**

Question 10: Have you used the Chapter 25A Section 14 $100,000 provision to contract for municipal energy projects through your utility?

Answer Options	Response Percent	Response Count
Yes	47.1%	40
No	52.9%	45
answered question		**85**
skipped question		**3**

Question 11: Would you use this process again? Why?

Response
Saves a huge amount of time and hassle.
Yes, it has allowed us to quickly address energy reduction projects with a single entity. This contributes to a more holistic approach to the community's energy needs.
What process are you referring to? Green Community application and potential funding?
Yes, because of the higher dollar threshold for bidding.
What process, grants or becoming a Green Community?
Our town is small and has limited staffing. This process allows us to get projects done in a reasonable time period. We had a hard time with the ARRA EECBG (American Recovery and Reinvestment Act Energy Efficiency and Conservation Block Grants) grant because of the procurement process and fair wage reporting requirements.
Yes, makes the procurement easier. But $100K per project threshold is too low.
Yes. While there is always room for program improvement, the Program has made adoption of the Stretch Energy Code and enforcement of the alternative vehicle policy easier.
Yes because it allows us to get the energy efficiency work done in a quick and timely manner. Procurement and contract requirements often delay or derail projects.
Yes, it was great to have funding to put towards efficiency measures which the city would not otherwise have had available.
Yes. Opportunity to move projects along.

Response
Yes - It's a good source of funding energy reduction projects.
Not clear - maybe not. The incentives took a LONG time to get clarified and were vastly different when finally paid than what we were told initially. Cannot tell if that is inherent in the process or not.
Yes.
Yes,
yes, it’s a great way to become aware of usage and the saving to which you can achieve both large and small, it all adds up
Yes
Because it simplified the process and we received good service
Simplified the process.
Yes. Streamlined and efficient
allowed us to save time during procurement
Convenience
Yes, Chapter 25A simplifies procurement.
it streamlines the procurement process, and we get the work done and start saving energy sooner
Accomplished goals. One less hurdle.
Yes. This has been an exceptional opportunity to upgrade the energy-consuming infrastructure for our buildings and to expedite the process using Chapter 25a, Section 14. We would not have been able to handle these projects due to our own lack of internal resources if we had to bid each project out directly. The National Grid incentive program has been a critical part of our process and has helped buy down project costs across the board for our town. In turn, we feel we were able to complete far more projects using our grant funding than if we had not gone after utility incentives.
Yes, it's quick and effective.
Yes, we hope to receive another round of Green Communities funds so we could complete the LED Streetlight project and we would use the Ch 25A process so that the town and NSTAR can do business together for a cost not to exceed $100,000 per measure. NSTAR applies the KWH savings immediately as new LEDs are installed. Under this agreement, we are allowed to complete two measures per year. We used and would use again the street lighting replacement as one measure and the related controls as the second measure.
Definitely. We have done numerous projects that we never would have attempted without the grant funding along with the eased contracting procedures under section 14 which allow us to contract directly with the utility and skip the arduous/expensive design/ procurement process for which we have neither time or funds. We will continue to take advantage of this opportunity as long as it is available.
Yes, promotes healthy environment, provides funding for energy savings projects and saves on energy use/cost
Yes because the procurement process is much easier to navigate compared to 30(b) requirements.
Yes, It insures were are on top of changes and all rebates
yes, it's a great program of state and local partnering

Response
I am on the fence since there is little support for the amount of specialized work that has to be done. I would highly recommend it to a community that has the needed skilled support working as a team, which are paid help vs. volunteers.
Yes, the utility has been very generous with incentives and rebates.
yes
Yes, it is so much more streamlined and efficient.
Yes, we continue to work on our five-year ERP and are planning to establish a town wide energy committee to expand the outreach and effectiveness of the Green Communities Program.

Question 12: Would you use this process again? Why not?

Response
Still waiting for funds to be dispersed
We are about to now contract under 25A. We had some projects already identified through our own staff and an energy consultant working with NGrid. We did the lighting through on bill payment, now we are completing retro-commissioning and DCV. the DCV was largely done in house, so we had no need for the expeditor at that time. We now need one and have chosen Guardian Energy (actually doing 1st walk-throughs today).
unaware of it
was not aware of it.
Have not yet gotten to that point. We do plan to use it.
Did not know it was available
did not know of this.
Not much qualifies for utility incentives in town buildings based on most recent study,
I am not sure if we have or not
Have not had the opportunity.
The projects we need to complete for the most part are over $100,000, and the ones under $100,000 are planned to be bundled.
Unaware of program
No projects to date have been applicable to that program.
Still in process of trying to decide what to do.
Our town energy efficiency projects were performed through a larger Energy Services contract and all utility rebates/incentives were included as part of a $2M project. The town is currently working with our utility's Municipal Energy Efficiency Program to perform improvements at remaining town buildings and all financing is being handled through the utility company so I answered no, since we are not dealing directly with Chapter 25A.
n/a
Lakeville is not eligible.

Response
Don't know the program
Starting that process now.
nothing yet—received Designation Dec 2013
professional recommendation has been to procure under the traditional 30B method
Not sure if it applies to our project.
Don't know about it.
not interested
We used Ch 25 for RFQ procurement of an ARRA solar project four years ago. Recent solar projects with Green Communities funds were smaller and Ch 149 RFP appeared simpler and faster. Maybe we did not understand the advantages of the specific Ch 25 process you mention above.
Joined a program through MAPC for an ESCO but did not contract with them.
We may have - don't know what this is.
No projects have been brought forward
We will Ch 25 on the next rounds of energy upgrades. Most of the engineering was done in-house.
Do not know about this provision
Not aware of it.
Don't know what that is.
Just received Green Community designation 4 months ago, and have not yet applied for grant funds.
We are not there yet. For a variety of reasons, we are still working on our application for funding the bulk of our programs. We are not ready to ask for funds beyond this yet. We will.
Not known by the committee until now!
Not familiar with it
I didn't realize there was such a fund.
Not at the project phase yet. Will utilize that option when we get to the implementation phase.

Question 13: What criterion's requirement has had the largest impact on reducing energy use in your municipality?

Answer Options	Response Percent	Response Count
As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)	1.2%	1
20% energy use reduction in 5 years (Criterion 3)	77.6%	66
Fuel efficient vehicle policy (Criterion 4)	0.0%	0
Stretch Code (Criterion 5)	11.8%	10
N/A	9.4%	8
answered question		**85**
skipped question		**3**

Question 14: Which criterion's requirement has had the largest impact on increasing overall sustainability throughout the community?

Answer Options	Response Percent	Response Count
As-of-right and expedited permitting for renewable energy (Criteria 1 & 2)	3.5%	3
20% energy use reduction in 5 years (Criterion 3)	43.5%	37
Fuel efficient vehicle policy (Criterion 4)	1.2%	1
Stretch Code (Criterion 5)	37.6%	32
N/A	14.1%	12
answered question		**85**
skipped question		**3**

Question 15: Do you have any projects or concrete plans to develop a project in your Criterion 1 R&D/Manufacturing zoned area?

Answer Options	Response Percent	Response Count
Yes	8.1%	7
No	79.1%	68
N/A	12.8%	11
answered question		**86**
skipped question		**2**

Question 16: Please describe your most successful project(s) funded through the Green Communities Program, and why it is considered successful.

Response
None yet
Lighting and Demand Control Ventilation. Lighting was so successful because of the on-bill payment and grant making it not actually need a CIP funding to note. DCV improves air quality, comfort, and has reduced heating costs, in some cases dramatically with no user sacrifices. Doing the DCV in house and having our in house staff go through the retro-commissioning process with EnerNoc were both excellent exercises in getting our staff more involved in energy management, more knowledgeable about how it works, what it can do, and about the energy management system itself and its capabilities. Education of staff has spurned on the ground ideas and buy in which is crucial to long-term energy reduction. The Team here consists of citizen Advisory Board, Business mgr, Foreman of electrical/mechanical, and representatives from water. The Team approach is very productive and inclusive.
We installed variable speed drives in 5 schools and the library. It is successful because it has instant payback-i.e. starts saving energy instantly and with some of the rebate funds, the paybacks were less than 2 years.
we have not received funding yet so there are no projects to date
Waste Water Treatment Plant heating reduction project - has resulted in dramatic reduction in heating fuel use.
All of the energy reduction projects conducted at the High School have combined to make that the most successful project location. The multiple projects have added up to a, nearly, 30% reduction of electricity use at that facility from one September to the next.

Response
At present, we have only insulated the library and done the Ngrid incentives. We are about to insulate the second building. Next, we are planning to install an energy management system in the library.
Built in 1998, the school has never had a fully operational HVAC system. In some classrooms, the custodian manually opened and closed classroom valves to turn the heat on and off. Exhaust fans ran 24/7. We used our Green Community money to upgrade the HVAC EMS and weatherize the Unit ventilators. The custodian told me that this winter the system had the fewest problems since he has been there. The teachers have told me that the classroom temperatures no longer spike from very hot to cold. The univent weatherization project is keeping cold air from coming into the classroom and as an added bonus also keeping the bees and bugs out of the classroom.
We are in the early stages of implementation so unable to point to successes. We expect our lighting and HVAC improvements to be most successful.
Fixing the Police station lighting and HVAC systems, large reduction in energy use.
School building projects energy reductions
Parking Lot LED lights—biggest energy reduction
Town Hall Building Automation System—The town hall is the newest building, but because of "value engineering" key components were removed so it is the town's most energy inefficient buildings. Poor commissioning was also an issue. Staff have been cold in winter and hot in summer forcing them to leave early on some days. The new EMS gave us the ability to get the heating and cooling systems to almost keep everyone happy which reducing energy costs.
The most successful project was the citizens energy initiative. More than 50 households were able to secure 1000 grants for reducing energy needs
Ball field lighting control allowed the Parks Dept to remotely shut off lighting when not in use. The natural gas street lamps controls, safely turn off the lights during the day, cutting usage in half and paving the way for a full adoption for all 3,000 lamps in the city.
106 kW PV array at the local tech school because it not only reduces costs but is used by students to learn about PV systems—the students calculate the optimal horizontal angle for the panels and adjust them quarterly.
The most successful project funded by the Green Community Program to date is the energy management system that was installed at the Elementary School. This has been our biggest success because the old pneumatic controls were in very bad shape and leaking air. This not only caused the air compressor to run constantly but it also made temperature control very difficult in each classroom. We installed the full DDC control system with funds from the Green Community Program. Since then we have had near perfect control. We are also not sending a tradesman there every day to field heating and cooling complaints because the new DDC system has been functioning so well.
The only project we got funding for is becoming successful—i.e. providing impressive incentives for energy efficient work on existing residential dwellings. We got an extension to expend all the grant funding by July 2015.
Have not yet completed any projects
Street light LED upgrades were the only funded project through Green Communities. It was completed due to state funding. However, the savings were not seen for unknown reasons. While 60% of all lights were replaced, only 4% energy savings have been seen across the past 4 years.
LED streetlight replacement. Most visible project.
Haven't really done any major projects yet.

Response
We funded 3 projects utilizing the National Grid utility incentive program. The result was retrofitting interior lights and 2 new EMS's in the city's two largest buildings.
The Energy Efficiency Program operated through our CDBG Department was able to assist 15 homeowners on 16 properties to make energy efficiency upgrades of $5000 to their properties over 2 grant cycles. This is successful because for relatively little investment, the town has been able to positively impact several lives and make homes more comfortable for residents while also reducing greenhouse gas emissions.
Hard to say. Our easiest projects have been simple boiler replacements. Our most difficult projects have been complicated systems enhancements, which we can't immediately calculate the benefit of. We need more monitoring and measurement capabilities to capture actual project benefits for complicated HVAC system projects.
Town Hall window replacement—the building is far more energy efficient
EMS recommissioning at KES allowed departments to understand how adjusting the tools we have could create a substantial return with a approx 1 year payback
The interior lighting upgrades were most successful so far, because we have experienced immediate energy reduction.
Insulation and lighting upgrades in 5+ municipal buildings, resulting in an 8% reduction in consumption to date.
Furnace replacement in our town hall
we have only completed the lighting upgrade
energy efficient/LED lighting.
nothing yet - received Designation Dec 2013
The school boiler and controls upgrade—replace 40 year old heating plant with energy efficient equipment
system upgrades to our 2 oldest schools, cost savings have been substantial over the past few years
LED Streetlights, Variable Speed Drives; biggest energy reducers
Funding an Energy Efficiency Manager position that can leverage all available funding opportunities, maximize Energy Commission capacity, and demonstrate to municipal decision-makers the benefit and need to continue making energy efficiency a priority.
Replacing the furnace boilers and the insulation, because all were needed, save energy and the town did not have the funds for the projects.
Honeywell system upgrades at the schools because it minimized consumption during off hours, therefore projecting to save the town a large amount of money in energy costs.
We renovated an old school turned community center, did a deep energy retrofit, and had fabulous energy saving results.
Replacement of the boiler and chiller units in the Town Hall. The original systems were extremely old and inefficient. Also, the new units allowed for the conversion from oil to natural gas compounding the savings.
As I said, we are still working to complete our first project.

Response
We are just beginning. The required audit has just been completed and we will now begin to determine where best to begin work. The only work completed is the lighting upgrade to all 6 buildings through National Grid.
Gas conversion project at city art center. Substantial annual savings have been realized.
Energy reduction at the elementary school. Considerable energy and cost savings.
Exterior lighting is very visible and widely accepted. Used Chapter 25A so procurement was easy.
Energy audits. To date they have been the only projects. Energy efficiency improvements to several town buildings based on the audit recommendations will begin this summer.
1) Home energy improvements (41 projects in 27 homes) not only leveraged more than double the Green Communities funds, but boosted community interest in green activities in Rowe.
Energy improvements in schools and public buildings to reduce costs
Lighting upgrades because they have made the biggest impact at the lowest cost.
they are all considered equally successful, they all assisted us in accomplishing our goal to reduce energy, and finance the projects
HVAC system upgrade at the library. $99,000 project was desperately needed.
Lighting replacement at Dewing School.
Our town library's heating and cooling system was running out of control. It was not only wasting energy but was causing issues for staff and patrons in terms of comfort levels. Because our town does not have a facility manager for town buildings, these issues went on for years. When we began to evaluate the building for energy efficiency measures, it lead us down a path to help correct a serious issue of 'control' that had been occurring for years. Our new EMS was installed early fall and the library staff and patrons are much happier. Funding from the town or library budget for this project would not have been possible without the use of our Green Community grant.
Streetlight conversion. It was our only project to date - but was successful because it had broad support, significant funding and was straightforward to implement. The energy savings are significant as well.
New heating and cooling controls at many of the town buildings and facilities
The Program has enabled us to take advantage of both large (condensing boilers) and smaller (exterior LED lighting) project opportunities in our municipal buildings, so that we can use energy conservation funds from the CIP on even more energy projects.
The most successful project through the Green Communities Program has been the replacement of our streetlights to LEDs. The funding from Green Communities gave the town the incentive to start the project and we hope with additional funds from Green Communities we will be able to complete the retrofit.
Converting the six overhead doors at the fire department to insulated doors. - Converting exterior lighting to LED lighting at 8 sites (4 schools and 4 municipal buildings). - A hybrid SUV for the police command vehicle. - Converting the heating boiler system at town hall to a high efficiency condensing boiler system.
Energy Management systems for Elementary School and Town Hall. Allows considerable flexibility in operation of heating system and for tracking use
Solar mini-grants promoted installation at twenty-six private properties.
Solar array to reduce electric costs at the Town Hall

Response
I was both the exterior LED lights and lighting upgrades in the schools.
The water treatment plan's various upgrades saved us a substantial amount in energy usage in a short amount of time.
The replacement of the HVAC system at the Veterans Community Center. The project has helped cut costs and save the town energy.
Performance Contracting Initiative, guaranteed energy savings of 26% on energy reductions and related dollars saved.
Major interior lighting and occupancy sensor upgrades at the school which carry significant KW savings
The most successful project was the retrofit of 1247 streetlights to LEDs. This project reduced the town energy use by 220,000 kWh and 30,000 dollars annually.
It is hard to choose the best as there hasn't been enough time to quantify results. Lighting retrofit projects are successful in that the public can see the change.
Conversion of three oil to propane gas heating systems for three of our larger buildings.
We are still in the beginning stages having an energy audit before we take any other steps. Other projects are just beginning.
N/A
We are not far enough along.
Boiler replacement in the Middle School. Timing was excellent. LED light replacement at the Sr Center and Town Hall. Savings are realized quickly.
The lighting projects were all completed in a timely way. There was a change in auditing personnel, so we received a second walk through and additional opportunities were identified and completed.
We have had difficulty completing any of our projects due to our consultant postponing an additional energy audit.
Not at that point at present
Solar PV at the Cemetery. It was a simple and straightforward project with immediate results. Lighting upgrades were very successful since they included large rebates and were relatively simple with a good return on investment. Retro commissioning was a great project that might not have been done without Green Communities support. But its main purpose was to identify energy saving opportunities and not initially making the repairs and changes that produced those savings. It has already triggered changes going forward.
EMS at the library - the library has been our most energy intensive building, with ever-increasing energy consumption. The EMS system has helped us to finally turn it around and diminish energy use at the library.
We have just completed the first set of projects through our initial grant funding, so it is too early to say. However, we feel there is great benefit expected from the EMS projects that have been undertaken.

Question 17: How would you improve the Division's implementation of the Green Communities Designation and Grant Programs?

Response
Make the paperwork easier to navigate
We have worked so hard to reduce energy but cannot meet the 5-year goal. We have asked who is meeting that goal, and what have they done, but have not been able to get information from Green Communities on what others are doing, what is working. It would be great if we had 1st round focus groups or meetings after our annual reports. Maybe more "coaching" and info on actual energy measures used to meet a 20% goal. With increased uses at our schools, library, and town hall, and building additions and vehicle fleet additions it is almost impossible to track our efficiency over time. How do we account for increased uses, global warming that has made us need more air conditioning for summer school? I now hear that regulations are going to be imposed on Green Communities to stay in the Program. This is upsetting. There should be a roundtable of all the 1st rounders, a focus group or directed discussion of where we are and why we are not meeting goal, and to talk about possible regulations before they are drafted without our input. The State itself has a goal of 25% reduction over 30 years, a much more lenient time frame. This was reported by Meg Lusardi at the Lowell Sustainability Conference a few weeks ago. Perhaps the State and local goals should be more aligned. It appears that renewable energy is included in the reduction goal for the State but not Municipalities. Due to the tax status of municipalities, we can only really enter into PPA's. We started with energy projects town-wide before our base year so came into this program pretty lean already. We are committed. We want to reach our goal, and the framework of the Program is excellent. It keeps us focused, makes us accountable, and keeps us moving forward. The recession hit us hard, delaying planned energy projects and we have just now been able to push it again to the forefront. I think that we could use more guidance, not the imposition of regulations which are disengaged and may feel like punishment, when we are working so hard in earnest to meet the goals of the Program.
Become informed and educated about fault detection and diagnostic software and incorporate competitive funding to include this as a competitive option.
Should be able to get some credit toward 20% reduction goal for implementing renewable energy projects.
Get rid of prevailing wage obstacles. We could have done at least 30% more with the funds.
Give more time for the completion of a grant-funded project.
It would be nice if there was a list of upcoming grant programs so that we could plan better. For example we will need to do another energy audit, this current competitive grant did not cover audits but it would t be nice to know if there was one planned in the future.
Excellent program. We have no recommendations for improvements.
Making reporting easier
less stringent reporting requirements
Great job! I strongly suggest a way to monitor energy use by circuit in builds so towns can have a way to remotely monitor building performance and have a feedback loop to react to energy overuse quickly. This will do more than anything to help towns maintain the energy savings and greenhouse gas emission reductions!
Assistance with Energy Stretch Code reporting. Building department pressed for time and providing a cities Green Communities contact with training on the requirements would be helpful.

Response
More grant funds. Besides that, the recent change allowing some communities to use grant funds to encourage/support efficiency in private facilities is a critical addition. The DOER should now - through research, pilot tests, etc. - develop best practices for communities to engage the private sector and provide training and assistance to communities to implement them. This could be coupled with a usable PACE program if the state passes senate bill S177.
I would suggest that the DOER have an on-call engineering firm for each district or even an in-house DOER engineer that could help check design of Green Communities grant submissions. Perhaps that person could also review and help identify additional efficiency projects for smaller Green Communities designees that do not have access to in-house engineers or have a lack of funding to hire an engineering firm. But I do think some utilities offer engineering design help to their municipal customers.
N/a. I think it is implemented and administered well and I appreciate professional and prompt feedback from all Green Communities Division staff,
Through email/newsletter, let us know what projects have been completed by Green Communities—not only a list (what, where, cost) but also stories of completed projects, highlighting the difficulties and the time-line and the strategies. It would help us to see what's happening around the state.
If possible, for most energy committees, assistance in reviewing the MEI data and pinpointing the key targets would be very helpful.
Less reliance on utility companies when executing projects, waiting for information on incentives can slow the process greatly. Also, incorporate more weather normalization data into MEI (as climate varies across the State).
Although the reporting requirements are reasonable, it still feels like there is always one due.
Of course providing more grant funding would help.
I would like more technical assistance to help evaluate projects that would further our status as a Green Community, i.e., detailed information on how to develop a town-owned PV array, best practices to improve fleet efficiency, etc.
Help clarify or codify the project proposal process so that contractors are using a standard form that includes all rebates, expected energy / cost savings, and project budget, schedule, etc. This would make all phases of project management more straightforward. Contractors won't help with this stuff unless there is a standard process.
Not sure
Training for new Towns and new personnel on MEI. More clarity of max grant amounts especially on the initial grant
For a small community like Lakeville, which has limited staff, it would be helpful if the Division could assist us with the scope of the projects and the actual grant application.
The implementation piece is fine. I am concerned about the possibility of being un-designated if the 20% goal has not been reached in five years.
make application and reporting requirements easier, make MEI understandable
Annual reporting requirements are quite onerous.
seems fine so far.
we think it is run well and don't have any suggestions at this point.
make the process more user friendly, simplistic, but still get the information needed

Response
No recommendation; the Department and staff have been most helpful and responsive
It has worked great so far. I think the only disappointment is that the initial grant was far less than anticipated so the projects had to be scaled down and other funding mechanisms had to be sought (i.e. the ESCO project) to reach our goals.
Not sure, it is complicated and tedious (recording the energy use, our town does not have N Gas), but I understand why you want all the information. It has also been helpful for the town to identified areas where the town is using too much energy. We have fixed many of the problem areas. The MEI information is also great information for letting the Select Board and the town know how much energy and money is being saved.
Provide more grant funds for replacement vehicles. Historically the town has repurposed cruisers. Due to lack of money for energy efficient models, administrative vehicles are simply retired and employees have to use personal vehicles for municipal tasks or share dwindling supply of old administrative vehicles (repurposed cruisers). To date, the town simply hasn't the money necessary to purchase fuel-efficient models, even if they are used. Priority for grant funds has been focused on reducing consumption and getting the town closer to its 20% goal.
Make annual reporting easier
Make more information available so we can see other community's results (name blind if need be) on MEI so we can benchmark ourselves against others.
I think the Program works quite well. The designation should require some effort and commitment from the municipality to achieve. The grant programs allows for annual participation, and while the reporting (grant and designation) is time consuming I believe all the right questions are asked to ensure progress and compliance. As an original community designated in 2010, I would like to know what the Green Communities Program will require of us in regards to the future of the 20% reduction plan.
Make it easier for small towns to report their energy use annually - as it is, in our town, this is a very labor-intensive task, and we are an all-volunteer committee.
I need more time before I can answer this. We need to do more projects to see where the savings will be. I am not happy about having to spend $19,000+ on the ASHRII audit as it really did not tell us anything we did not know or did not cover in the Green Communities application. The audit might work really well for big towns and cities, but not for a small town like us with only 6 inadequately insulated old buildings! We knew what we had to do.
Personally, I think DOER Green Communities Division is doing all the right things.
No change. It is working fine for this community.
Fund energy audits so municipalities can learn more about their properties/opportunities. Highlight successful transportation projects other than EV, such as anti-idling.
Reduce the level of detail required in the reporting, or at the very least provide technical assistance to communities that lack the staffing in preparing the required reporting.
Possibly reduce reports from 4 to 3 annually. Encourage small towns to make MEI entries a municipal, not a volunteer process. Support communities in how to implement DPW Diesel and gasoline conservation (and encourage biodiesel use)
We appreciate EOER's recognition that town's have competing demands and little staff capacity to be doing this 24/7
Very good as is.

Response
offer the grant opportunity twice a year instead on annually,
Division is doing a very good job. Probably one of easiest and most understanding agencies to work with.
MEI is not easy to use, has a ton of useless data and is missing key elements that really allow the end user to delve into how energy is being consumed, how it should be viewed and what information is critical to have access to. The set up is critical so that the structure of buildings by department is accurate. More assistance during set up of this tool would be helpful to ensure MEI is usable and updates are occurring properly. A more robust reporting tool that delivers information to the end user in the form of standardized reports vs. having to log in, run reports, export them into excel to be modified/understood and then saved and sent around would be a huge step in the right direction. The Annual Report was a monster to undertake the first year. There are so many tabs and parts that it's extremely confusing and cumbersome to use until you have gone through it. Increase the $100k limit for Chapter 25a, Section 14. $100k is too low to be able to bring in more comprehensive projects that could be put together using the utility vendors. It limits what projects we can actually implement without having to go through a whole design/engineering and bid process - which gets put off because that process demands a high level of administration. Simplify the utility incentive process for municipalities. Provide a set kwh/therm amount for lighting and non-lighting projects and simplify the information required to submit an application. The process is extremely complicated for municipal projects with too many steps and way too much paperwork for all parties involved.
Broader/more direct annual reporting support.
Nothing to improve at this time
Perhaps provide more assistance to those municipalities that are implementing their energy reduction plans but are not seeing the expected reductions in their energy bills; assistance in comparing numbers taking into account weather variables; support of community-wide outreach programs (which is where most of the town's greenhouse gas emissions are coming from).
When we were applying to become a Green Community it was frustrating that the deadlines did not match up with our Town Meeting. I would try to better coordinate that for communities so they could get the necessary approvals in before the deadline.
Allow grants for hybrid vehicles.
Make reporting requirements less burdensome. Even though our regional coordinator was extremely helpful, some requirements are onerous given the town's limited staff.
I think the documents are time consuming and we are very busy to complete the documents in the time allowed. The vehicle policy was a challenge for us.
Reduce reporting requirements and increase funding opportunities.
Some of the reporting can be very technical so additional assistance or training would be helpful.
I would not recommend change at this time
help communities follow up with utilities/contractors to see if the proposed savings are what the communities are actually getting?
Hire a bunch of Energy Manager's to help municipalities large and small complete the reporting requirements and provide guidance with obtaining cost estimates for funding renewable energy projects and offering grant funding more frequently.

Response
In the beginning of the Green Communities Act, communities were allowed to install renewable energy projects (solar) with Green Community monies. This seems to have gone away and for a small town like ours, installing solar would be significant in energy use and cost reductions. Trying to reduce energy use is difficult when the weather dictates usage. The extreme winter caused usage to skyrocket this year and is discouraging.
Not sure.
I've had no problems with the Program. My questions have been answered in a timely fashion and getting approval for projects has been quick and painless.
N/A
Clearer communications about what you expect from us.
Can't think of any ways to improve on the Program. It's excellent!
Maintaining the MEI has been our biggest challenge. Accounts that used to be reported from WMECO are no longer listed so we have to enter manually and no one has time to do it.
Open eligibility to all municipalities. Regional Greenhouse Gas Initiative (RGGI) funds provide most or all of the Green Communities Program funding. We all contribute to RGGI.
Lessen the reporting requirements. Jane has been a great help but it's difficult for a small community with little staff to keep up.
I think we might need guidance on how to get 20% additional energy savings, to a net 50% decrease since energy management got started. Once the "low hanging fruit" has been plucked, it is increasingly challenging to reduce.
Initiate more energy manager grants, to assist communities with both the application and administration of the project.

APPENDIX E: ADDITIONAL CRITERION-SPECIFIC DATA

Table E-1. Criteria 1 & 2: Sited Projects, 2013

Community	Projects?	Date	Description	Comments
Acton	No			Solar Project but not under town's Green Community Designation
Amherst	No			
Andover	No			
Arlington	No			
Ashfield	No			
Ashland	Yes	2012	Solar	Permits granted
Athol	No			
Auburn	No			
Ayer	No			
Barre	No			
Becket	No			
Bedford	No			
Belchertown	No			
Berlin	No			
Beverly	No			
Boston	No			
Bridgewater	No			Solar Project but not under town's Green Community Designation
Brookline	No			
Buckland	No			
Cambridge	No			
Carlisle	No			
Chelmsford	No			
Chesterfield	No			
Conway	No			
Dedham	No			
Deerfield	No			
Easthampton	No			Solar Project but not under town's Green Community Designation
Easton	No	2012		
Gardner	No			
Gill	No			
Gloucester	No			Solar Project but not under town's Green Community Designation
Greenfield				Solar Farm produces 58% of town’s electric consumption.
Hamilton	No			
Hanover	No			Solar Project but not under town's Green Community Designation

Community	Projects?	Date	Description	Comments
Harvard	No			
Hatfield	No			
Holland	No			
Holyoke	No			Solar Project but not under town's Green Community Designation
Hopkinton	No			
Huntington	No			
Kingston	Yes	2012	Wind	
Lakeville	No			
Lancaster	No	2013		
Lenox	No			
Leverett	No			
Lexington	No			
Lincoln	No			
Lowell	No	2013		
Marlborough	No			
Mashpee	No			
Maynard	Yes	2013	Solar	
Medford	No			Solar Project but not under town's Green Community Designation
Medway	No			
Melrose	No			
Mendon	No			
Middlefield	No			
Millbury	No			Solar Project but not under town's Green Community Designation
Milton	Yes	2012	Wind	
Monson	Yes	2013	Solar	
Montague	No			
Natick	No			Solar Project but not under town's Green Community Designation
New Salem	Yes	2011	Solar	
Newburyport	No			
Newton	No			
Northampton	No			Solar Project but not under town's Green Community Designation
Northfield	No			
Palmer	Yes	2011	Solar	
Pelham	No			
Pittsfield	No			
Provincetown	Yes	2013	Solar	
Quincy	No			
Revere	No			
Richmond	No			
Rowe	No			
Salem	Yes	2012	R&D	

Community	Projects?	Date	Description	Comments
Scituate	Yes	2012	Solar	
Sherborn	No			
Shirley	No			
Shutesbury	No			
Springfield	No			
Sudbury	No			Solar Project but not under town's Green Community Designation
Sunderland	Yes	2013	Solar	
Sutton	No			
Swampscott	No			
Tewksbury	No			
Topsfield	No			
Townsend	No			
Tyngsborough	No			
Truro	No			
Watertown	No			
Wayland	No			
Wenham	No			
Weston	No			
Williamstown	No			
Winchester	No			
Woburn	No			
Worcester	No			

Table E-2. Criterion 3: Energy Usage and Reductions by Category for Baseline Year and Most Recent Data Year

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Acton	FY2009	83,932	0	1,900	18,176	3,284	107,292	
	FY2013	69,104	0	1,226	20,035	2,774	93,139	13.2%
Amherst	FY2011	29,349	462	1,770	15,964	13,096	60,641	
	FY2013	27,713	393	1,624	12,510	12,707	54,947	9.4%
Andover	FY2008	86,638	0	4,656	16,871	29,998	137,163	
	FY2013	81,655	0	2,861	16,263	28,130	128,909	6.0%
Arlington	FY2009	100,386	0	5,237	17,688	595	123,906	
	FY2013	88,433	0	3,928	17,287	448	110,096	11.2%
Ashfield	FY2010	988	0	34	1,558	793	3,373	
	FY2013	998	0	29	1,631	529	3,187	5.5%
Ashland	FY2011	38,304	42	1,100	7,969	5,543	52,958	
	FY2013	44,035	55	1,092	6,838	6,6016	58,036	-9.6%
Athol	FY2009	8,687	0	0	6,014	7,806	22,507	
	FY2013	7,471	0	0	5,146	7,316	19,932	11.4%
Auburn	FY2011	33,700	0	1,900	9,624	2,617	47,481	
	FY2013	26,517	0	1,869	7,810	2,554	38,750	18.4%
Ayer	FY2009	5,937	32	780	1,806	7,542	16,097	
	FY2013	5,610	12	48	3,615	7,334	16,619	-3.2%
Barre	FY2011	6,989	6	0	0	3.930	10,925	
	FY2013	4,718	3	0	1,719	3,764	10,204	6.6%
Becket	FY2009	1,518	0	82	3,525	0	5,125	
	FY2013	675	0	100	3,774	0	4,849	5.4%

[6] The first year listed for each community is the baseline year and the second is the data from the most recent annual report review.

[7] The Open Space category is loosely defined and therefore is not required to be reported on.

[8] Wide ranges in energy reductions across communities is due to winter weather, different baseline years, square footage added, major equipment issues, vehicle usage, etc.

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Bedford	FY2009	47,753	0	2,145	10,592	4,811	65,301	
	FY2013	45,501	0	1,843	8,991	4,075	60,410	7.5%
Belchertown	FY2009	48,771	5	453	7,159	3,501	59,889	
	FY2013	35,867	5	459	6,946	2,995	46,272	22.7%
Berlin	FY2011	7,905	0	21	2,282	0	10,208	
	FY2013	8.012	0	21	2,232	0	10,265	-0.6%
Beverly	FY2009	89,880	457	952	9,798	5,683	106,770	
	FY2013	76,875	217	792	8,928	5,904	92,716	13.2%
Boston	FY2010	1,189,061	13,324	311,351	408,531	0	1,922,061	
	FY2013	1,217,050	9,737	250,014	430,770	0	1,971,404	-2.6%
Bridgewater	FY2009	7,929	1,491	7,147	6,756	5,761	29,084	
	FY2013	6,799	1,142	6,733	7,836	5,495	28,005	3.7%
Brookline	FY2009	126,471	2,488	11,181	17,063	15	157,218	
	FY2013	123,708	2,594	4,377	19,622	6	150,307	4.4%
Buckland	FY2009	1,222	0	149	1,379	0	2,751	
	FY2013	1,126	0	166	1,142	0	2,434	11.5%
Cambridge	FY2008	192,115	6,821	22,204	41,725	41,591	304,456	
	FY2013	144,214	6,471	21,162	37,323	36,475	245,645	19.3%
Carlisle	FY2009	12,339	0	0	2,924	0	15,263	
	FY2013	11,405	0	0	3,881	0	15,286	-0.2%
Chelmsford	CY2008	77,102	0	2,175	15,080	0	94,357	
	CY2012	64,206	0	2,134	15,616	0	81,956	13.1%
Chesterfield	FY2010	1,682	10	22	297	0	2,111	
	FY2013	824	10	22	1,322	0	2,178	-3.2%
Conway	FY2010	3,347	0	0	1,778	0	5,125	
	FY2013	3,165	0	0	1,643	0	4,808	6.2%
Dedham	FY2009	54,047	274	304	0	169	54,794	
	FY2013	54,721	463	129	4,853	383	60,549	-10.5%
Deerfield	FY2009	8,165	0	517	2,568	2,113	13,363	
	FY2013	5,824	0	477	2,603	1,892	10,823	19.1%

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Easthampton	FY2009	29,129	9	1,342	7,640	8,355	46,475	
	FY2013	32,507	10	1,286	6,684	7,219	47,706	-2.7%
Easton	FY2009	57,488	0	2,132	11,569	5,434	76,623	
	FY2013	51,359	0	2,107	10,639	4,720	68,825	10.2%
Gardner	FY2008	43,614	0	1,987	6,231	0	51,832	
	FY2013	-	-	-	-	-	-	-
Gill	FY2010	3,221	0	74	1,319	26	4,640	
	FY2013	2,426	0	48	1,285	20	3,809	17.9%
Gloucester	FY2009	65,823	0	5,140	13,292	11,988	96,243	
	FY2013	58,339	0	4,857	14,013	10,553	87,762	8.8%
Greenfield	FY2008	49,742	0	4,928	12,335	6,036	73,041	
	FY2013	40,659	0	2,482	13,258	3,186	59,585	18.4%
Hamilton	FY2009	19,134	88	550	3,524	1,891	25,187	
	FY2013	18,422	94	548	3,528	1,710	24,302	3.5%
Hanover	FY2008	39,389	0	818	9,909	5,920	54,963	
	FY2013	30,098	0	772	9,464	6,758	46,675	15.1%
Harvard	FY2009	20,521	2	91	3,706	419	24,739	
	FY2013	-	-	-	-	-	-	-
Hatfield	FY2010	5,840	0	161	2,721	1,799	10,521	
	FY2013	5,584	0	144	2,259	1,535	9,522	9.5%
Holyoke	FY2009	141,100	0	22,271	29,473	18,277	211,121	
	FY2013	120,708	0	17,788	30,363	16,405	185,264	12.3%
Hopkinton	CY2009	48,664	0	594	7,265	2,183	58,706	
	CY2012	41,664	0	449	6,446	2,242	50,801	13.5%
Huntington	FY2011	2,865	0	130	1,254	552	4,801	
	FY2013	1,388	0	134	1,232	436	3,190	33.6%
Kingston	CY2009	28,131	135	39	8,013	9,254	45,572	
	CY2012	19.649	106	34	7,074	8,382	35,245	22.7%
Lakeville	FY2011	10,074	69	0	7,245	0	17,388	
	FY2013	8,639	60	0	7,179	0	15,878	8.7%

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Lancaster	CY2008	4,925	0	252	4,125	1,182	10,484	
	CY2012	4,527	0	198	3,979	1,292	9,996	4.7%
Lenox	FY2009	21,694	9	476	4,491	3,578	30,248	
	FY2013	20,940	1	542	4,305	3,870	29,685	2.0%
Leverett	FY2009	3,459	0	4	615	0	4,078	
	FY2013	3,501	0	38	1,384	0	4,923	-20.7%
Lexington	FY2008	105,804	6,281	7,727	15,023	1,889	136,724	
	FY2013	97,631	755	2,789	17,485	1,812	120,472	11.9%
Lincoln	FY2008	22,826	7	66	4,462	2,277	29,638	
	FY2013	19,628	0	2	5,213	2,683	25,499	14.0%
Lowell	FY2008	260,516	8,268	14,699	37,684	68,856	390,023	
	FY2013	215,990	3,848	2,551	32,035	71,887	326,311	16.3%
Marlborough	FY2009	81,335	78	5,529	15,405	22,674	125,021	
	FY2013	74,681	78	5,360	11,971	31,828	123,918	0.9%
Mashpee	FY2009	23,662	0	441	8,244	0	32,347	
	FY2013	23,573	0	396	9,261	0	33,231	-2.7%
Maynard	FY2011	34,198	0	9,261	4,857	191	48,507	
	FY2013	23,731	0	7,114	4,827	187	35,859	26.1%
Medford	FY2009	112,423	1,077	8,250	17,550	101	139,401	
	FY2013	79,238	815	7,830	18,150	106	106,139	23.9%
Medway	FY2009	42,311	82	721	5,532	2,735	51,381	
	FY2013	37,387	98	714	6,290	2,835	47,324	7.9%
Melrose	FY2009	55,049	0	4,956	14,765	1,167	75,937	
	FY2013	51,846	0	4,881	10,214	958	67,899	10.6%
Mendon	FY2010	7,142	13	272	3,316	0	10,743	
	FY2013	6,504	26	212	2,799	0	9,541	11.2%
Middlefield	FY2009	1,312	0	5	941	0	2,257	
	FY2013	-	-	-	-	-	-	-
Millbury	FY2009	33,997	102	1,013	6,158	2,589	43,859	
	FY2013	29,966	64	1,008	5,267	2,785	39,090	10.9%

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Milton	FY2008	66,919	27	3,834	11,725	629	83,134	
	FY2013	44.821	77	1,357	6,262	676	53,193	36.0%
Monson	FY2010	23,610	0	277	8,965	1,354	34,206	
	FY2013	24,731	0	272	9,812	1,226	36,041	-5.4%
Montague	FY2008	19,557	0	16	5,179	0	24,752	
	FY2013	11,432	0	16	4,218	4,975	20,641	16.6%
Natick	FY2008	102,029	8	2,813	21,450	13,113	139,413	
	FY2013	70,768	0	3,776	21,907	11,482	107,934	22.6%
New Salem	FY2009	1,336	0	0	1,223	0	2,559	
	FY2013	592	0	0	1,463	0	2,055	19.7%
Newburyport	FY2009	39,522	0	3,366	11,770	16,501	71,159	
	FY2013	30,758	0	13,630	9,353	3,124	56,865	20.1%
Newton	FY2008	245,902	528	15,192	34,753	3,469	299,844	
	FY2013	204,588	482	11,163	33,712	3,104	253,049	15.6%
Northampton	FY2009	75,977	1,439	4,514	15,963	15,744	113,637	
	FY2013	61,413	1,162	4,540	15,169	15,447	97,731	14.0%
Northfield	FY2011	1,746	0	206	2,666	460	5,078	
	FY2013	1,857	0	157	2,517	303	4,834	4.8%
Palmer	FY2009	35,205	635	3,209	5,744	14,999	59,792	
	FY2013	19,567	539	1,614	4,658	3,771	30,149	59.6%
Pelham	FY2011	-	-	-	-	-	3,207	
	FY2013	1,706	0	9	1,041	0	2,755	9.0%
Pittsfield	FY2008	117,297	1,905	8,750	32,532	25,633	186,117	
	FY2013	143,670	1,317	8,190	34,266	23,172	210,616	-13.2%
Provincetown	FY2009	16,059	58	147	4,039	2,759	23,062	
	FY2013	12,539	69	141	10,163	2,485	25,397	-10.1%
Quincy	FY2011	174,387	383	15,825	38,140	2,500	231,235	
	FY2013	141,842	427	15,571	41,504	2,463	201,807	12.7%
Revere	FY2009	93,272	0	9,076	13,295	617	116,260	
	FY2013	82.160	0	8,750	10,077	540	101,527	12.7%

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Richmond	FY2010	5,782	0	0	1,138	25	6,945	
	FY2013	4,900	0	0	1,314	46	6,260	9.9%
Rowe	FY2009	3,478	30	48	1,394	0	4,960	
	FY2013	-	-	-	-	-	-	-
Salem	FY2009	67,126	3,595	8,623	18,075	1,003	98,422	
	FY2013	60,968	3,238	7,962	17,248	1,076	90,494	8.1%
Scituate	FY2010	40,745	2,215	2,326	14,377	16,622	76,285	
	FY2013	29,259	2,177	2,284	14,322	14,080	62,122	18.6%
Sherborn	FY2009	9,385	23	58	3,020	19	12,505	
	FY2013	8,527	9	47	2,661	16	11,260	10.0%
Shirley	FY2011	5,196	0	367	2,226	927	8,716	
	FY2013	4,487	0	302	2,152	874	7,815	10.3%
Shutesbury	FY2009	3,174	0	0	1,382	0	4,556	
	FY2013	3,068	0	0	1,122	0	4,190	8.0%
Springfield	FY2007	444,623	4,054	36,116	75,809	0	560,602	
	FY2013	317,826	3,536	32,038	78,197	0	431,597	23.0%
Sudbury	FY2008	65,757	1,264	1,135	11,713	3,401	83,270	
	FY2013	58,997	983	582	10,500	2,970	74,032	11.1%
Sunderland	FY2011	6,697	3	151	1,023	786	8,660	
	FY2013	3,992	3	152	1,107	749	6,003	30.7%
Sutton	CY2008	27,873	0	37	7,181	1,346	36,437	
	CY2012	20,245	0	27	7,048	1,219	28,539	21.7%
Swampscott	FY2009	37,063	177	2,964	4,562	1,536	46,302	
	FY2013	35,835	197	2,930	4,687	1,427	45,076	2.7%
Tewksbury	FY2009	81,245	0	2,430	10,893	11,848	106,266	
	FY2013	51,966	25	2,460	11,439	9,190	75,080	29.4%
Topsfield	FY2009	12,696	0	37	4,171	925	17,829	
	FY2013	12,472	0	19	3,680	878	17,049	4.4%
Townsend	FY2010	4,014	4	16	4,464	1,786	11,027	
	FY2013	4,447	11	6	4,025	1,383	9,872	10.5%

Community	Year[6]	Buildings	Open Space[7]	Streetlights	Vehicles	Water/Sewer	Total	% Energy Reduction[8]
Truro	FY2010	7,604	0	53	2,834	0	10,491	
	FY2013	5,195	0	49	4,002	0	9,246	11.9%
Tyngsborough	FY2008	26,865	0	1,065	11,201	1,181	40,132	
	FY2013	23,461	0	1,125	7,732	1,145	33,463	16.6%
Watertown	FY2010	-	0	2,035	-	-	388,586	
	FY2013	388,884	0	1,948	11,872	0	402,704	-3.6%
Wayland	FY2010	42,891	0	1,553	7,410	3,467	55,321	
	FY2013	42,380	0	1,343	6,120	2,675	52,518	5.1%
Wenham	FY2009	12,108	0	413	3,379	899	16,799	
	FY2013	12,253	0	415	2,918	1,076	16,662	0.8%
Weston	FY2011	69,301	532	836	16,585	1,586	88,840	
	FY2013	61,334	474	824	15,275	1,403	79,310	10.7%
Williamstown	FY2008	8,678	0	0	5,148	2,574	16,400	
	FY2013	8,252	0	0	4,962	1,769	14,983	8.6%
Winchester	FY2010	65,298	101	2,242	9,963	2,085	79,662	
	FY2013	64,917	106	1,952	11,022	2,411	80,408	-0.9%
Woburn	FY2010	72,225	659	654	17,660	8,451	99,649	
	FY2013	66,271	670	671	12,577	10,626	90,815	8.9%
Worcester	FY2009	450,815	0	0	46,911	103,977	601,703	
	FY2013	387,238	5,163	30,078	62,601	25,850	510,930	15.1%

Table E-3: Criterion 4: 2013 Fleet Size

Community	Exempt	Non-Exempt	Total	% Non-Exempt
Acton	88	44	132	33%
Amherst	190	28	218	13%
Andover	116	34	150	23%
Arlington	152	39	191	20%
Ashfield	19	1	20	5%
Ashland	78	10	88	11%
Becket	24	1	25	4%
Bedford	36	23	59	39%
Belchertown	73	9	82	11%
Berlin	25	0	25	0%
Beverly	191	34	225	15%
Bridgewater	70	17	87	20%
Brookline	217	61	278	22%
Cambridge	254	93	347	27%
Carlisle	27	1	28	4%
Chelmsford	114	37	151	25%
Chesterfield	13	0	13	0%
Dedham	96	8	104	8%
Deerfield	22	1	23	4%
Easthampton	50	25	75	33%
Gloucester	61	28	89	31%
Greenfield	93	45	138	33%
Hamilton	47	0	47	0%
Hanover	89	13	102	13%
Hatfield	26	6	32	19%
Holyoke	177	46	223	21%
Hopkinton	30	3	33	9%
Kingston	65	6	71	8%
Lakeville	40	7	47	15%
Lenox	62	2	64	3%
Leverett	21	1	22	5%
Lexington	82	30	112	27%
Lincoln	35	8	43	19%
Lowell	252	80	332	24%
Mashpee	52	8	60	13%
Maynard	35	16	51	31%
Medford	147	13	160	8%
Medway	52	12	64	19%
Melrose	98	26	124	21%
Mendon	32	2	34	6%
Millbury	48	8	56	14%
Monson	74	8	82	10%
Montague	34	9	43	21%
Natick	107	20	127	16%

Community	Exempt	Non-Exempt	Total	% Non-Exempt
New Salem	20	0	20	0%
Newburyport	87	30	117	26%
Newton	38	72	110	65%
Northampton	177	52	229	23%
Northfield	23	1	24	4%
Palmer	34	7	41	17%
Pelham	15	1	16	6%
Pittsfield	223	101	324	31%
Provincetown	69	14	83	17%
Quincy	275	53	328	16%
Revere	116	15	131	11%
Richmond	15	2	17	12%
Rowe	16	2	18	11%
Scituate	108	26	134	19%
Sherborn	28	2	30	7%
Springfield	249	213	462	46%
Sudbury	27	19	46	41%
Sunderland	15	2	17	12%
Sutton	51	16	67	24%
Swampscott	45	24	69	35%
Tewksbury	81	6	87	7%
Topsfield	22	6	28	21%
Tyngsborough	72	13	85	15%
Watertown	56	22	78	28%
Wayland	125	15	140	11%
Wenham	31	0	31	0%
Weston	133	25	158	16%
Williamstown	26	8	34	24%
Winchester	98	24	122	20%
Woburn	111	64	175	37%

Table E-4. Criterion 5: Projects Built to the Stretch Code in 2013

Community	New Residential (NR)	Residential Renovation (RR)	Commercial (C)	HERS Range for NR
Acton	79	144	18	48-70
Amherst	24	121	23	51-70
Andover	42	0	0	47-70
Arlington	10	0	0	55-66
Ashfield	3	0	0	N/A
Ashland	61	4	0	50-92[9]
Ayer	0	5	0	N/A
Becket	12	2	0	47-64
Bedford	31	31	18	45-65
Belchertown	35	17	2	43-70
Berlin	16	1	2	35-70
Beverly	5	29	2	57-64
Bridgewater	34	0	0	54-70
Brookline	25	411	44	56-70
Cambridge	17	201	20	42-65
Carlisle	1	0	0	53-53
Chelmsford	16	2	5	56-70
Chesterfield	6	5	0	54-67
Dedham	19	0	0	54-69
Deerfield	0	36	8	N/A
Easthampton	8	1	0	40-70
Gardner	0	0	0	N/A
Gloucester	29	8	0	28-70
Greenfield	10	0	4	50-70
Hamilton	5	3	0	56-68
Hanover	2	2	0	70-70
Hatfield	1	0	0	70-70
Holyoke	2	1	7	54-56
Hopkinton	82	1	0	49-70
Huntington	1	0	0	N/A
Kingston	27	17	0	55-70
Lakeville	28	48		51-67
Lenox	2	0	3	41-68
Lexington	38	967	141	48-69
Lincoln	0	0	0	N/A
Lowell	36	596	3	52-72
Marlborough	26	0	0	N/A
Mashpee	82	21	2	52-66
Maynard	16	36	0	61-70

[9] HERS rating of 92 does not meet the code compliance requirement, however local code officials received an exception after filing a request with BBRS.

Community	New Residential (NR)	Residential Renovation (RR)	Commercial (C)	HERS Range for NR
Medford	11	279	16	58-67
Medway	17	0	0	51-69
Melrose	7	115	1	47-61
Mendon	11	4	1	65-70
Millbury	27	19	3	49-70
Monson	11	0	0	49-62
Montague	2	0	0	N/A
Natick	10	1	0	47-65
New Salem	2	0	0	57-61
Newburyport	20	0	1	49-69
Newton	44	0	0	42-70
Northampton	25	0	7	40-69
Northfield	0	5	0	N/A
Palmer	5	2	0	65-67
Pelham	0	0	0	N/A
Pittsfield	10	37	2	54-65
Provincetown	8	131	4	59-65
Quincy	41	2	6	52-70
Revere	20	0	0	46-70
Richmond	1	0	0	N/A
Rowe	1	0	0	67-67
Scituate	42	14	0	52-69
Sherborn	3	6	0	57-57
Shutesbury	0	0	0	N/A
Springfield	23	0	12	56-70
Sudbury	37	0	0	50-67
Sunderland	0	0	0	N/A
Sutton	37	0	0	54-65
Swampscott	0	0	0	N/A
Tewksbury	42	0	0	53-70
Topsfield	0	0	0	N/A
Tyngsborough	14	0	0	54-70
Watertown	0	218	47	N/A
Wayland	30	93	12	53-65
Wenham	9	18	0	N/A
Weston	25	5	2	53-64
Williamstown	1	6	1	N/A
Winchester	28	0	0	50-70
Woburn	30	88	0	56-69

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