City of Gardner
Massachusetts

Green Communities Action Plan

July 2010

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Demand Management Institute

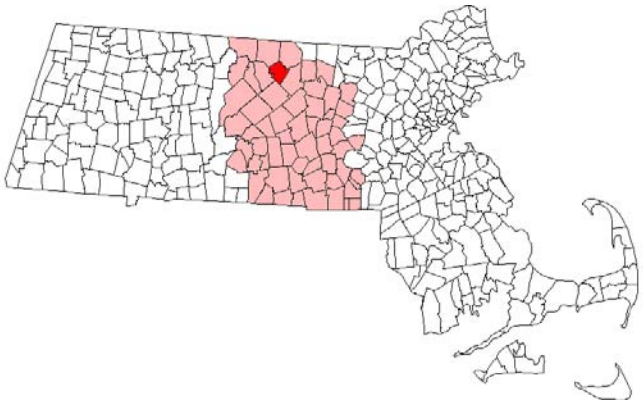
Introduction

The development of this Green Communities Action Plan provides the City of Gardner with a set of actions to meet each of the five required criteria to achieve the Green Community designation. The Action Plan provides a comprehensive summary of all the actions that the City has already taken to date and identifies the critical remaining steps to meet all five criteria and successfully become a Green Community. With the Green Community designation, Gardner will become formally recognized as a sustainability leader in the Commonwealth, gain financial and environmental benefits through municipal energy savings and reduction of greenhouse gas emissions, and potentially attract new economic development opportunities within a rapidly expanding green economy. Lastly, as an official Green Community, the City of Gardner will qualify to apply for up to $1 million in Green Communities grants for studying, designing, constructing or implementing energy efficiency and renewable or alternative energy projects including but not limited to:

- Energy conservation measures and projects
- Procurement of energy management services
- Installation of energy management services
- Adoption of demand side reduction initiatives
- Adoption of energy efficiency policies.
- Financing the siting and construction of renewable or alternative energy projects on municipally-owned land

Gardner is located in North Central Massachusetts on Route 2 approximately 30 miles northwest of Worcester and 60 miles northwest of Boston. Gardner is bordered by Winchendon and Ashburnham on the north, Templeton on the west, Westminster on the east and Hubbardston on the south.

The City is governed by a Mayor and City Council. Gardner is a dynamic city with much to offer those who live in, work in, and visit. The City has a proud history of furniture manufacturing. The City achieved international recognition as a major center for chair fabrication to the point that it became known as the "chair city of the world", a testament to this is a 20 foot tall chair sitting in front of the Helen Mae Sauter School.



City of Gardner Facts	
Population (2000 US Census)	20,770
Date Incorporated as a City	1923
County	Worcester
Size of Land Area	23 square miles
Regional Planning Commission	Montachusett RPC
Number of Municipal Buildings	51

Manufacturing is still a significant part of the local economy, but now it is diversified rather than concentrated in chair and furniture manufacturing. Gardner is also proud to say that within 23 square miles one can find Mount Wachusett Community College, Heywood Hospital, many unique shops and wide array of recreational opportunities including an outstanding municipal golf course and the southern terminus of the North Central Pathway.

Currently on the Chicago Climate Exchange (CCE), Gardner has been on the forefront of renewable energy and alternative energy development. With the support of a Massachusetts Technology Collaborative (MTC) grant, Gardner extracts methane gas from landfill for power generation and markets greenhouse gas credits on the CCE. Gardner is interested in exploring more opportunities for renewable energy/alternative energy (RE/AE) facilities on city-owned sites.

In the summer of 2009, the City of Gardner submitted a joint application with the Town of Winchendon for Green Communities Planning Assistance to the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA) Department of Energy Resources (DOER). Gardner's application included a letter of commitment from the Mayor of Gardner to meet all five criteria within one year of the technical assistance award. In June 2009, Gardner established an Energy Commission for the purpose of addressing the City's needs for energy conservation, energy efficiency, and alternative energy alternatives.

The application established and provided evidence that the City met some of the requirements of the Green Communities Criteria (meeting one or more is required for eligibility). A summary outline of the application is provided below:

- **As-of-Right Siting/Zoning**. Gardner's zoning ordinance allows as-of-right "scientific or research laboratory" facilities including those that engage in RE/AE.

- **Expedited Permitting Process**. Gardner adopted Chapter 43D Expedited Permitting and has approved three Priority Development Sites, which are all located in the Industrial 1 (IND1) or Industrial 2 (IND2) zoning districts.

- **Establish an energy baseline for all building, vehicles and streetlights and commits to reducing baseline by 20 percent over five years**. Gardner participated in the Energy Audit Program sponsored by the DOER and has had energy audits completed for six municipal buildings.

Status of the Five Criteria At A Glance	
As-of-Right Siting/Zoning	Complies
Expedited Permitting Process	Complies
Energy Baseline and Reduction Plan	Needed
Fuel-Efficient Vehicles	Needed
Efficient New Construction/ Stretch Energy Code	Needed

- **Procure Fuel Efficient Vehicles**. Gardner is considering the practice of purchasing fuel efficient vehicles for its police, public works and inspectional fleets but has not yet adopted a fuel efficient vehicle policy.

- **Require all new construction to minimize life-cycle cost of the facility by utilizing energy efficiency, water conservation and other renewable or alternative energy technologies**. Gardner is interested in adopting 780 CMR 120. AA "Stretch Energy Code" administered by the Board of Building Regulations and Standards (BBRS). The City will be considering adoption of the Stretch Energy Code in the near future.

1. Summary of Initial Site Visit

On October 19, 2009, Vanasse Hangen Brustlin (VHB), the consultant providing Gardner with technical assistance in support of its Green Communities Action Plan, met with City staff, including Rob Hubbard, Planning Director; Bob Hankinson, City Engineer; and Jennifer Dymek, Grants Administrator. Felipe Schwarz of VHB first provided an overview of the Green Communities Planning Assistance program and the goals of the technical assistance that will be provided.

The consultant team reviewed Gardner's application by criteria. Staff from Gardner provided additional clarification on the City's progress on each of the criteria. The group also brainstormed on how the City might further the City's progress toward meeting each criterion, identified possible gaps in meeting the criteria, as well as additional RE/AE opportunities within the City. After a thorough review of Gardner's application, the group discussed possible presentation or workshop topics that would be helpful as part of the technical assistance program. The consensus was that a technical presentation introducing the Stretch Energy Code and providing a question and answer session for building inspector staff and an additional presentation on Stretch Code for the joint Energy Committee and public officials.

Appendix A provides detailed meeting notes and a sign-in sheet of the initial site visit. VHB's team also includes a subconsultant, Demand Management Institute (DMI) who assisted on the energy baseline and reduction and Stretch Energy Code outreach tasks.

1

As-of-Right Siting for Renewable/ Alternative Energy Facilities

Green Communities Criteria #1

Provide for the as-of-right siting of renewable or alternative energy generating facilities, renewable or alternative energy research and development (R&D) facilities, or renewable or alternative energy manufacturing facilities in designated locations.

1. Background

A municipality must provide for as-of-right siting of renewable energy or alternative energy (RE/AE) generating facilities, RE/AE research and development (R&D) facilities, or RE/AE manufacturing facilities in designated locations. Green Communities Program guidance outlines the definitions of RE/AE as well as the requirements for R&D and manufacturing facilities. Additionally, the Green Communities Program has identified specific types of RE/AE generation facilities that are applicable to this criterion. They include:

- wind turbines (minimum of 600 kW in size);
- single ground-mounted system of solar photovoltaic (minimum 250 MW); or
- biomass combined heat and power generation in a stand-alone building (minimum of 5 MW).

As-of-right siting refers to the allowance of a particular use, such as those described above, by right within the zoning bylaws/ordinances. In short, the bylaws/ordinances do not unreasonably regulate such development nor do they require a Special Permit. As described in the criteria, the as-of-right siting is only required in the location(s) designated by the community for the use(s) selected. In some cases, the placement of these uses may already be allowed by right in the current zoning bylaws/ordinances as a permitted use for specific locations identified by the community, such as an Industrial District. In other cases, the zoning bylaws/ordinances may need to be amended to allow as-of-right siting for the particular facility(ies) in the location(s)

designated by the community. This may be accomplished in different ways, such as a change to the existing use table or the creation of a new zoning overlay district. Any zoning amendment would require the applicable local legislative approval method, as required by the Commonwealth's Zoning Act (M.G.L. Chapter 40A). If already allowed or once enacted, the as-of-right siting will allow an individual, business, corporation or governmental entity to establish the RE/AE facility identified in a specified location selected by the community, by right and without unreasonable regulation or special permit. Other permits may continue to be required for construction (such as conservation commission permits, air quality permits, building permits, fire code standards) or doing business (such as state or local licenses).

2. Progress to date

Gardner currently meets this criterion because Gardner's zoning for Light Industry and General Industry allow RE/AE research and development (R&D) and/or manufacturing uses.

Research and Development Facilities
In 2009, Gardner amended its Industrial District 1 (IND 1) and Industrial District 2 (IND 2) to allow as-of-right "scientific or research laboratory" which would include RE/AE R&D facilities. (Appendix B).

Manufacturing Facilities
Gardner allows as-of-right manufacturing uses such as those including "converting, fabricating, manufacturing, altering, finishing and/or assembling" in its IND1 and IND2 zoning districts. Allowable manufacturing uses include facilities related to RE/AE manufacturing (Appendix B).[1]

While Gardner does not specifically provide as-of-right siting of RE/AE generation facilities, Gardner is interested in pursuing and promoting RE/AE generation projects within the City. These efforts are described further below.

Solar PV
Gardner is supportive of pursuing solar PV generation, and is interested in getting a better understanding of the requirements, costs, financial feasibility and siting requirements for large-scale solar PV generation. The City has a large landfill site that faces southwest that will be assessed for solar PV feasibility.

Wind
The Gardner Zoning Ordinance allows a "Wind Energy Conversion Systems" by special permit within the Industrial 1 and Industrial 2 districts (refer to Appendix B).[2] Gardner's Zoning Ordinance clearly defines a "wind energy conversion system" and prescribes the siting and dimensional requirement of wind generation facilities within Ind1 and Ind2 zoning districts.[3] While this ordinance does not meet the criteria requirements due to the need for a special permit, it clearly illustrates the city's interest in planning and considering RE/AE generation within industrially-zoned sections of the City.

3. Method for Meeting Criteria

Type of as-of-right zoning

As described in the previous section, Gardner currently complies with the criterion to provide as-of-right siting for the development of RE/AE R&D and/or manufacturing facilities.

Documentation

Gardner will provide a letter from the City Solicitor confirming that the City of Gardner's IND 1 and IND2 zoning districts allow for R&D and manufacturing of RE/AE activities. In addition, the letter will provide yield calculations or statements that adequately zoned sites are available for RE/AE facilities, demonstrating that there is land available for the construction of a facility or facilities of 50,000 square feet or larger. Additionally, the letter from the City Solicitor will confirm that any permitting procedures that require a Special Permit are not required for RE/AE R&D or manufacturing uses that may be proposed within IND1 or IND2 sites.

4. Steps Completed During Planning Assistance

The following steps were completed during the Planning Assistance:

- VHB reviewed the Gardner Zoning Ordinance.
- VHB provided model bylaws as guidance.
- VHB confirmed that a letter from City Solicitor is required.
- VHB reviewed zoning and map of Industrial zoning districts.
- VHB reviewed current zoning for siting as-of-right RE/AE generation.

5. Action Items & Schedule

In order to apply to become designated as a Green Community, the City must complete the following tasks to meet this criterion within 12 month of the submittal of this Action Plan.

Action Item	Person Responsible	Completion Date
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director/City Solicitor	Within 3 months
1. Letter from municipal counsel certifying that the existing zoning complies with the RE/AE Facilities criteria	Community Development & Planning Director/City Solicitor	Within 3 months
2. The applicable section of zoning bylaw/ordinance	Community Development & Planning Director	✓
3. Copy of zoning map that shows area zoned	Community Development & Planning Director	✓
4. Important zoning definitions	Community Development & Planning Director	✓
5. The relevant section of the use table and any key that will help DOER interpret the use table	Community Development & Planning Director	✓
6. Any related local regulations applicable to facilities sited under the bylaw/ordinance—such as site plan review regulations—so that DOER can confirm that the related local regulations are non-discretionary;	Community Development & Planning Director/City Solicitor	Within 3 months
7. Yield calculations must be either included in the text of the letter or attached.	Community Development & Planning Director/City Solicitor	Within 3 months

✓ Provided in Appendix B

2

Expedited Permitting

Green Communities Criteria #2

Adopt an expedited application and permitting process under which these energy facilities may be sited within the municipality and which shall not exceed 1 year from the date of initial application to the date of final approval.

1. Background

To qualify as a Green Community, a municipality must adopt an expedited permitting process for RE/AE facilities sites identified in Criteria #1. The expedited timeframe for permitting shall not exceed one year from the date of initial application to the date of final approval. By adopting an expedited permitting process, the municipality is committing to making local permitting decisions within one year. The one year deadline will be established with an effective enforcement mechanism which is the inclusion of constructive approval provisions within local bylaws/ordinances or regulations. An expedited permitting process is accomplished by providing a transparent and efficient process for municipal permitting by various boards, including but not limited to, the Planning Board, Conservation Commission, Historic Commission, Zoning Board of Appeals, Fire Chief, and Board of Health. The result is a streamlined procedure that is efficient for municipal staff and boards to implement, and that will provide a predictable schedule for decision making for the applicants.

2. Progress to Date

The City of Gardner currently meets this criterion as there are three Priority Development Sites under Chapter 43D Expedited Permitting within the Industrial 1 and 2 Districts, which allows "as-of-right" siting for RE/AE R&D and manufacturing. All three PDS offer opportunities for siting RE/AE facilities including generation (see Appendix C).

- Summit Industrial Park PDS – Located off Pearl Street (Route 101), the Summit Industrial Park PDS is comprised of land owned that is privately owned and owned by the Gardner Redevelopment Authority (GRA). The entire PDS contains approximately 114 acres. Of the total, the GRA owns approximately 99 acres of currently vacant land.
- Mill Street PDS – A series of parcels totaling approximately 37 acres along Mill Street comprise the Mill Street PDS. Of the total, the City owns approximately 27 acres, while the remaining approximately 10 acres is privately owned. Some of the city-owned parcels contain buildings, while some are currently vacant.
- Rear Main Street PDS – The approximately seven-acre Rear Main Street PDS is a compilation of six mostly privately-owned downtown parcels. These sites are located along the backside of parcels which front Main Street. From discussions with the City, it is likely that these sites will not remain zoned to allow for R&D and manufacturing in the future due to their downtown location.

3. Method for Meeting Criteria

Type of Expedited Permitting
As described in the previous section, three sites within the City of Gardner, designated as Priority Development Sites (PDS), fulfill the Green Communities Criterion 2 for expedited permitting.

Documentation
The City of Gardner will provide DOER with a certified copy of their City Council vote designating the as-of-right zoned parcels as Priority Development Sites with its application to become certified as a Green Community. The City of Gardner will also submit a copy of the PDS site plans.

4. Steps completed during Assistance

- VHB documented the Chapter 43D process and City permitting process

5. Action Items & Schedule

Action Item	Person Responsible	Completion Date
Compile the required documentation for Green Communities Designation Application	Grants Administrator	Within 1 month
Submit the required documentation for Green Communities Designation Application including the following materials:	Grants Administrator	Within 1 month
1. A certified copy of Gardner's City Council vote designating the as-of-right zoned parcel(s) as a Priority Development Site ("PDS")	Grants Administrator	✓
2. A copy of the applicable map(s) showing the two PDS sites	Community Development & Planning Director	✓

3

Energy Use Baseline Inventory and Reduction Plan

Criteria #3

Establish an energy use baseline inventory for municipal buildings, vehicles, street and traffic lighting, and put in place a comprehensive program designed to reduce this baseline by 20 percent within 5 years of initial participation in the program.

1. Background

To fulfill Criteria 3, a municipality must establish an energy use baseline inventory for municipal buildings, vehicles, street and traffic lighting, and put in place an Energy Reduction Plan designed to reduce this baseline by 20 percent within five years of initial participation in the program. The energy use baseline inventory should be applied in the aggregate across buildings, streetlights, traffic lights and vehicles on a million British Thermal Units (MBTU) basis. There are a number of acceptable tools for performing the inventory including:

- MassEnergyInsight: In 2010, the DOER developed a new energy information reporting tool created MassEnergyInsight, a robust, easy-to-use, energy information system with customized electricity, natural gas and oil usage details for cities and towns across Massachusetts. This web-based tool is provided at no cost to the municipality and offers a wealth of information that provides the foundation for critical decision making,
- Energy Star Portfolio Manager: This is a free energy and water consumption tracking software available on the Energy Star website. This program allows an entity to track and assess energy and water consumption within individual buildings (generally consisting of at least 5,000 square feet) as well as across numerous buildings. This program does not assess the energy consumption of vehicles, street or traffic lighting.
- ICLEI Software: The ICLEI software, Clean Air and Climate Protection (CACP) Software, is a one-stop emissions management tool that calculates and tracks emissions and reductions of greenhouse gases and criteria air pollutants. This tool

is available, free of charge, to members of ICLEI and has the capacity to assess buildings and facilities, vehicle fleets, waste, wastewater treatment, employee commute, street and traffic signals, and port and airport facilities.
- Other tools proposed by the community and deemed acceptable by DOER

Once the energy use baseline inventory has been established, the community must develop an Energy Reduction Plan to decrease energy consumption by 20 percent consisting of a number of key components which would enable a municipality to establish energy reduction goals and develop a structure to meet those goals over a five year time frame.

2. Quantification of Energy Use

This subsection includes descriptions of municipal assets, utility accounts, current energy purchasing agreements, methods of tracking energy use, how results are to be presented, and those persons who will be responsible for overseeing the energy consumption review and reporting process. Reductions in energy use will be calculated relative to a baseline year. It is important that the same methodology and data sources are used to quantify energy consumption for the baseline analysis and future analyses to ensure a fair comparison of energy performance.

City Assets and Management

The City of Gardner provides services to its 20,770 residents through multiple departments that have day-to-day operating budgets. Capital intensive upgrades and annual budgets must be approved by the City Council and Mayor.

The lists of properties presented below are assets the City directly controls and they are divided based upon the best contact to discuss management and energy matters.

Municipal Property

Gardner Schools

Contact: Robert O'Brien, Director of Facilities, (978) 632-1000

- Gardner High School
- Gardner Middle School
- Elm Street School
- Helen Mae Sauter School
- Waterford Street School
- Waterford Street Administration Building
- Non-leased Vehicles

Gardner Fire Department

Contact: Ronald Therrien, Fire Chief, (978-630-4052)

- Main Station
- Elm Street Fire Station
- Lake Street Fire Station
- Emergency Operations Center
- Non-leased Vehicles

Gardner Health Department
Contact: Bernard Sullivan, (978-632-4682)

- Animal Shelter
- Landfill

Gardner Municipal Golf Course
Contact: William Frank, Superintendent, (978) 630-4003

- Pro Shop, Golf House, and other customer support
- Restaurant
- Maintenance Buildings
- Pump Systems
- Non-leased Vehicles

Gardner Police Department
Contact: Neil Erickson, Chief of Police, (978) 632-3575

- Main Police Station
- Non-leased Vehicles

Gardner Highway Department
Contact: Dane Arnold, Director, (978) 632-7661

- Highway Garage and Support Buildings
- Municipal Lights
- Radio System
- Non-leased Vehicles

School and Pedestrian Lights
Contact: Mike Gorell, Wiring Inspector, (978) 632-7661

Parks & Cemetery
Contact: Mike Gonyeo, Superintendent

Gardner Building Department

Contact: Richard Reynolds, Building Commissioner, (978-630-4007)

- City Hall
- City Hall Annex

Gardner Council on Aging (COA)

Contact: Daniel Novak, Senior Citizen Director (978-630-4067)

- Senior Center

Greenwood Memorial Pool

Contact: Don Lemieux, Superintendent, (978-632-0678)

Gardner Municipal Airport

Conctact: Kevin McCole, Airport Manager, (603-490-0367)

All water and sewer services are provided under a 20-year agreement with United Water, and the City does not have any control over the operation of the water supply or wastewater treatment systems. United Water's energy use will not be included in the municipal baseline.

The City-owned and operated streetlights and signals need to be included in the baseline energy use calculation.

Energy Providers and Sources of Energy Data

Electricity for the entire City is provided by National Grid. The City holds electrical generation purchasing contracts with Templeton Light. A summary of National Grid account numbers has been prepared by the City and is presented in Appendix D.

Most municipal buildings use heating oil, but some are connected to natural gas. A summary of Unitil account numbers has been prepared by the City and is presented in Appendix D.

Heating oil is purchased from Dennis K Burke for all school and city buildings. A new contract was started in 2010, so there is no billing history with Dennis K Burke. The City will need to research the suppliers that served the city accounts in 2008 and 2009.

Propane is provided by Eastern Propane, and is used for heating in eight buildings. A list of account numbers is attached in Appendix D.

Diesel and gasoline for vehicles and equipment is purchased from Global Petroleum through the state bid list. All city vehicles are fueled at the highway garage, and fuel consumption is logged for each vehicle and department using an electronic key system.

Calculation Methodologies

Prior to involvement in the Green Communities process, Gardner begun tracking its energy usage through a spreadsheet database (Appendix D) as a preliminary method of consolidating energy billing data to track end use consumption.

Going forward, the City hopes to use MassEnergyInsight, the DOER's energy information reporting system. MassEnergyInsight allows for instant download of electricity and natural gas consumption information from large utilities. Monthly consumption of gasoline, diesel, heating oil, and propane will need to be entered manually by City staff. Training sessions on MassEnergyInsight required by the DOER have been attended by City staff.

Data that is manually entered into MassEnergyInsight may need to be manipulated if billing cycles do not coincide with the end of each month. For example, if a billing cycle starts on June 12, 2009 and ends on July 15, 2009, the energy use during July will be calculated using the following expression:

*July 2009 Energy Use = Energy Use for Billing Period * 15 Days in July ÷ 33 Days in Billing Period*

While fluctuations in the severity of winter weather impact heating fuel consumption, the calculation of annual energy use will not be normalized to account for these variations. It is not uncommon for fuel purchased in one fiscal year to be held for use during the following winter.

The overall energy consumption of all municipal and school buildings, fleets, and other holdings will be combined into a single value that will represent the energy consumption of the City for one year.

Energy Use Baseline

The baseline year can be 2007, 2008, or 2009, and the City can choose which data set to utilize. Furthermore, the City can choose whether to report energy consumption based on the calendar year or fiscal year.

The deadline for achieving a 20 percent reduction in energy use is five years after the end of the baseline year.

Gardner will calculate savings for each fiscal year relative to the consumption data for fiscal year 2008 (the period July 1, 2007 through June 30, 2008). The City will need to achieve a 20 percent reduction in energy

use by June 30, 20l3 to maintain their Green Communities status. The decision to use Fiscal Year 2008 as the baseline is based on the desire to capture credit for the many upgrades to city property that were undertaken in 2009.

Going forward, the baseline energy consumption will not be adjusted for any of the following reasons:

- The construction, demolition, or transfer of ownership of City buildings[4]
- The acquisition or loss of City vehicles
- The expansion of the wastewater collection system or the water supply system to service new customers

Exempt energy end uses include the following:

- Commercial space and vehicles that are leased by the City
- Street light fixtures and signals that are owned by the state or electric company

New Construction, Renovations and Replacement of Buildings

In order to address issues within a municipality's proposed Energy Reduction Plan related to new buildings or renovations or additions to municipal buildings, the following provides guidance for all communities as they draft their plans:

- For building stock added after the energy baseline was completed but during the Energy Reduction Plan timeframe (five years), the additional energy load from these buildings will not be added into the consumption profile and therefore the additional load will not be factored into the 20 percent reduction target. However, the MassEnergyInsight tool will be able to monitor the performance of these buildings, which will be built to the Stretch Code, and if a community is designated, it will be expected to monitor the performance of this building under its Green Communities reporting to verify that it is performing as designed and modeled. If it is not, a corrective action plan must be developed and implemented to correct the building's performance.
- Renovations that occur after completion of the baseline but during the Energy Reduction Plan timeframe (five years) will be factored into the 20 percent reduction. This is not additional space and should be done such that the space will be more efficient than it was before the renovation.
- For additions that occur after completion of the baseline but during the Energy Reduction Plan timeframe (five years), after the addition comes on line, the energy load for that building counted towards the 20 percent reduction target will be pro-rated based on the building square footage. For example, if an addition provides an additional 30 percent square footage for the building, then 70 percent of the energy bills will be

accounted for in monitoring the community's progress towards meeting the 20 percent reduction target.

- For communities that select to use a baseline that goes back two years, and then after the baseline year new buildings came on line, the additional load from these buildings will not be added into the consumption profile and therefore the additional load will not be factored into the 20 percent reduction target. However, as part of the Green Communities designation application and the Energy Reduction Plan, the community should address these buildings separately, noting how these building were built to be as energy efficient as possible and what the energy performance of the building was designed to meet. The Energy Reduction Plan must include a separate monitoring program for these buildings to ensure that they are performing as designed and modeled, and include a plan for corrective actions if they are not.
- For buildings that are removed from the building stock after the baseline was completed but during the Energy Reduction Plan timeframe (five years) and are not replaced by a new building, once these buildings are removed, the baseline will be readjusted to subtract that building and the 20 percent reduction target will be revised accordingly.
- For buildings originally included in the baseline that go offline and are replaced by a new building, the baseline will not change, and the new building will be included in the 20 percent reduction target.
- At any time, a community can petition DOER to consider modification of its baseline. For example, a community may replace an existing smaller school with a new school that is significantly larger, with a pool added, etc, and they may wish to adjust its baseline to take this added square footage and energy use data into consideration. DOER reserves the right to approve or deny any such petition.

Presentation of Results

An annual energy use report will be completed by the Director of Community Development & Planning or appropriate staff within six weeks of the end of each fiscal year (August 15). The purpose of this annual report is to do the following:

- Provide a status update on progress toward the 20 percent reduction goal
- Explain factors that either increased or decreased total City energy consumption
- Describe efforts undertaken during the previous year to reduce energy use
- Describe efforts that will be undertaken during the coming year
- Describe changes to the original energy reduction plan if it is found that the original scope of effort is unlikely to result in the 20 percent energy reduction target

DOER is planning to release specific reporting guidelines for reporting content and format. In the absence of this guidance, the City will include the following items in annual energy reports:

- A bar chart illustrating how the overall energy use of the City has varied over past years. The 20 percent energy use reduction target will be indicated by a horizontal line passing across all of the columns. MassEnergyInsight will be capable of producing this chart.
- A chart illustrating the distribution of energy use among the major end use groups listed below. Additional charts will be included that further break down energy use within each major end use group. MassEnergyInsight will be capable of producing these charts.
    - City Buildings
    - School Buildings
    - City Vehicles
    - School Vehicles
    - Street Lights & Signals
- Tables presenting normalized energy use for each end use account
    - Buildings will be compared on a kBtu/yr·ft^2 basis (thousands of Btu per year per unit area of conditioned space)
    - Vehicle fuel will be compared based on gallons consumed
    - Street lights and signals will be compared based on annual kilowatt-hours

3. Energy Reduction Strategies

The third goal of the Green Communities process is to reduce municipal energy use by 20 percent within five years of the baseline year. This document serves as a roadmap that describes steps that have already been taken by the City, current plans for on-going optimization, and potential future modifications that can help achieve the target reduction.

The City will create an Energy Reduction Plan within one year of the submission of this initial Green Communities planning document that will include specific projects to be undertaken and their estimated impact on energy use.

The following sections provides a snapshot at previous energy reduction measures, current initiatives, potential measures to be considered within a future Energy Reduction Plan and resources that the City of Gardner may consider when creating the required Energy Reduction Plan.

Past Efforts

Garner participated in the DOER's energy audit program in 2008; ADI performed the reviews. The six buildings listed below were studied and their findings were presented in reports dated March 14, 2008. The audit walkthroughs identified several upgrades for each building and recommended retro-commissioning for all six facilities.

- City Hall (report revised February 12, 2009)
- Central Fire Station
- Elm Street School
- Greenwood Swimming Pool
- Helen Mae Sauter School
- Gardner High School

The City worked with National Grid to upgrade lighting systems in four schools and three city buildings in 2009.

The windows in City Hall were recently upgraded, and this had a very large impact on fuel oil consumption.

Several traffic lights were converted to LED-type lamps in 2009.

Decorative lights in the downtown area were upgraded in 2003.

The City worked with DOER and the American Development Institute (ADI) in 2008 to determine whether biomass heating systems could be implemented at the Waterford School and the Greenwood Pool. This investigation found that the use of biofuels at the Waterford School is likely to be cost effective while changes to the pool building are not economically attractive. No further action has been taken on the retrofit of the school's heating system. DOER and ADI studied the feasibility of installing a solar heating system for the pool, and released their results in a study dated February, 2009. It was recommended that the City gather installation cost information. No further action has been taken at this time.

Gas escaping from the City's decommissioned landfill had been ignited using a flare. The City received funding from the Massachusetts Technology Collaborative (MTC) to study the feasibility of delivering this gas to a nearby school. This project was found to be impractical. Instead, the City built a small generating plant. The plant is now leased to a nearby paper mill located in the neighboring town.

Current Efforts

The City has recently applied to become a Green Community and is in the process of implementing this action plan.

The City now has an energy committee consisting of the City Engineer, the City Planner, the Health Director, the Director of Public Works, the School Business Manager, and City Grants Administrator.

Recently, the City was awarded an Energy Efficiency and Conservation Block Grant ($150,000) from DOER to fund the replacement of the boiler at Helen Mae Sauter School.

The City obtained funding from the Massachusetts Clean Energy Center ($50,420) to conduct a feasibility study, using existing wind data from the nearby North Central Correction Institute, to evaluate the potential for installing a wind turbine in the 600 kilowatt (kW) – 1.5 megawatt (MW) range at the 20-acre Summit Industrial Park.

The City is currently waiting for funding from the Renewable Energy Trust to continue studying the economic feasibility of installing a 1.65 MW wind turbine at Summit Industrial Park.

The school department is applying for a grant to convert an old oil-fired boiler to three high-efficiency natural gas boilers.

Potential Measures for Energy Reduction Plan

HVAC & Controls Improvements

All buildings should be reviewed to identify systems or equipment that are not operating as designed.

- The building should be reviewed for these potential issues:
    - Excessive ventilation rates
    - Poor control of ventilation scheduling (e.g. bringing fresh air into unoccupied buildings)
    - Inoperable economizer controls
    - Broken damper linkages
    - Overridden setpoints in control systems
    - Timeclock schedules that do not correspond to actual use patterns
    - Pumps operating against partially closed valves

  - Static pressure and differential pressure setpoints that are higher than necessary

- Consider hiring a testing and balancing contractor to review problematic buildings with a history of occupant comfort complaints or in systems with variable speed controlled fans/pumps that operate at high speeds when system loads are low.
- Review facility operation during unoccupied hours to identify equipment that is operating unnecessarily. Lights, large HVAC equipment, and pumping systems are common culprits.
- Install programmable thermostats to control all systems where setback is possible, and program the thermostats to allow space temperatures to be set back to 60°F or cooler and 85°F or warmer. Care should be taken to ensure proper freeze protection. Equipment rooms with electric unit heaters commonly have broken controls or controls that are set warmer than necessary. Mail-in rebates from Energy Star may be available for these thermostats.
- Air sealing of buildings is a standard approach to reducing heating costs. Care needs to be taken when reducing infiltration to prevent conditions favorable to mold formation. Improved ventilation control may be required in some cases. Energy recovery ventilators can reduce operating costs associated with increased mechanical ventilation airflow rates.
- Spaces with high design occupancies, such as auditoriums, may be over-ventilated relative to the number of people who are actually present for many business hours. Demand controlled ventilation controls allow ventilation rates to be reduced without compromising indoor air quality.
- Energy recovery ventilators are cost effective in situations where the outside air fraction must remain above 60 percent during non-economizer hours. For systems that do not require this much outside air, demand controlled ventilation controls are generally more cost effective.
- Ensure that all pipes, valves, and system components are insulated for space heating systems and domestic water heating systems.
- Consider installing thermostatically controlled valves or autovalves on radiators serving buildings with limited space temperature control capability. Digital control systems are an alternate approach that provide increased management and monitoring flexibility but at a higher cost.
- Place exhaust fans on timeclock or occupancy sensor control to minimize unnecessary exhausting of conditioned air.

- Engage a company knowledgeable about the latest boiler and burner technology to review existing heating plants to determine whether cost-effective improvements can be made. The installation of advanced combustion controls with sealed air intake can improve overall system performance and reduce building infiltration.
- Implement policies requiring specific guidelines for unoccupied equipment operation in buildings. Regularly tour unoccupied buildings to ensure compliance.

Lighting Improvements

- Drive through City and identify street lights and other exterior lights that are operating unnecessarily during the day.
- Turn off street lights if it is acceptable to residents and does not pose a public safety or property damage issue. Street lights can also be retrofitted with lower wattage, higher efficiency lamps and ballasts.
- Continue to take advantage of utility lighting efficiency programs to upgrade interior lighting systems. Improvements include reballasting and relamping with high efficiency T8 technology, the installation of occupancy sensors, and implementation of daylighting controls near exterior windows.
- Identify spaces that may be over-lit relative to illumination levels required for typical tasks. Replace fixtures or lamps as needed.
- Modify lighting system circuits to allow for multi-level switching. For example, allow fixtures along exterior walls with windows to be turned off.
- Utilize task lighting rather than general lighting provided that the changed light levels do not pose safety issues.

Building Envelope Improvements

- Fill uninsulated walls with an insulation product such as cellulose or foam. Care needs to be taken to manage condensation and avoid the creation of indoor air quality problems.
- Utilize the Energy Star Thermal Bypass Checklist to identify areas where infiltration is most commonly found, and properly seal voids, gaps, and cracks.
- Replace old single-pane windows with Energy Star rated windows. The greatest energy impact will be in buildings with low internal heat gains and leaky, double-hung windows.

- Review historic buildings that may have been constructed with gravity air distribution systems to ensure that old chases are completely blocked at the roof and pickup points. If buildings still rely upon gravity systems, consider installing ductwork, dampers, and fans to bring ventilation rates under control.
- Retrofit exterior doors to minimize infiltration. In entrance areas that are routinely under-heated during the winter, consider installing a second set of doors to create an unconditioned air lock.

Process Equipment Improvements

- Review lab hood systems at the schools to ensure that safe ventilation rates are maintained and that the hoods do not operate excessively.
- Review exhaust systems serving vehicle bays to ensure that safe ventilation rates are maintained and that conditioned air is not unnecessarily being exhausted. Automatic controls utilizing carbon monoxide sensors could be of use.
- Review pumping systems to ensure that throttling valves are more than 90 percent open; consider the installation of VSDs on systems that are routinely more heavily throttled.

Vehicle Improvements

- Review the age and mileage performance of trucks, buses, and cars that the City owns and determine whether the lower operating costs associated with new, fuel efficient vehicles would justify replacement of older models. There may be grant programs for improving bus fleets.

Alternative Energy Systems

- Solar hot water systems are the most cost effective option in the alternative energy market and should be considered for sites with good solar exposure, a moderate to heavy service water load, and an older or inefficient hot water generation system.
- It is recommended that photovoltaics be explored or pursued after efficiency projects in the City have been evaluated and/or implemented.
- Ground-coupled heating and cooling systems are commonly called 'geothermal' systems and are mistakenly regarded as a kind of renewable energy. Ground-coupled heat pump systems can lead to

reduced heating costs but retrofits of existing heating systems are generally not cost effective.

Energy Reduction Plan Resources

The major gas and electric utility companies offer considerable expertise and resources for municipalities searching for ways to improve energy performance. Facility managers should remain in contact with their utility representatives and fully understand the requirements of the prescriptive and custom incentive programs. One major benefit of working with utilities is the offer of free or reduced cost scoping studies and their standard 50/50 cost sharing offer for focused engineering studies.

Municipalities can independently hire consultants to perform comprehensive operations and maintenance (O&M) reviews of City buildings and facilities. These services can help managers prioritize projects relative to budget constraints, risks to equipment/building longevity, and energy performance goals. It is important that these consultants be aware of utility incentive program requirements/opportunities and the City's goal of reducing energy consumption by 20 percent.

MassEnergyInsight will allow each building within the City to be compared on a Btu/ft^2 basis. Additional benchmarking resources exist that allow a building's annual energy use to be compared to other buildings within the geographical region. Energy Star's portfolio manager provides a performance score for specific building types (e.g. schools, office buildings) based on historical utility data and building use details. More information can be found at the following website:
http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfolio manager_benchmarking

The City should consider subscribing to National Grid's Energy Profiler Online service to access historical 15-minute demand data for facilities on the large commercial rates (monthly demand >200 kW). This data can be reviewed to determine a facility's demand profile during unoccupied hours. If unoccupied demand is more than 10 percent of the normal occupied period demand, then there may opportunities for setting back or turning off equipment. This data is also useful in identifying equipment response to programmed building schedules and past changes in operating strategies.

4. Method for Meeting Criteria

Upon the City's participation with the MassEnergyInsight tool, the fiscal year 2008 (and current) utility data will need to be reviewed and fuel use data will need to be entered into the system. Additional inputs include the conditioned floor area of each

building. This process will create the baseline energy consumption number that the City will work against over the next five years. The results of the baseline analysis will be contained in an initial energy use report. This report will be submitted to DOER.

Then, the City will need to determine which steps they will be taking to achieve the required 20 percent reduction in municipal energy. The approach will need to be documented in an Energy Reduction Plan that must be filed with DOER's Green Communities Program.

The Energy Reduction Plan will include summaries of the recommendations prepared by various consultants and vendors as well as opportunities the City has identified. Estimates of energy savings and costs for each action will be included in the plan.

Upon completion, the Energy Reduction Plan will need to be approved by the Mayor or City Council, whoever has the authority to approve such a plan. In addition, since the baseline will include Gardner schools, DOER requires approval of the Energy Reduction Plan by the appropriate school department representative (ie, either Superintendent of Schools or School Committee) in accordance with typical city procedures.

Documentation

The City of Gardner will provide DOER with the identified energy baseline reporting tool, which is likely to be DOER's MassEnergyInsight tool, the results of the baseline inventory, and an approved Energy Reduction Plan that describes how the City will reduce energy use by 20 percent over the next five years.

5. Steps completed during Assistance

- VHB/DMI identified the necessary information required to develop the energy baseline.
- DMI reviewed all energy data submitted for review including Energy Audit Program information and EECBG applications.
- VHB/DMI held a conference call with the City to discuss all energy information data to better grasp the extent of municipal energy use and initiatives.

6. Action Items & Schedule

Action Items	Person Responsible	Completion Date
Attend MassEnergyInsight training session	Department of Public Works	✓
Configure MassEnergyInsight tool, review account numbers and enter 2009 fuel data for baseline	City Energy Committee	✓
Identify specific improvement opportunities	City Energy Committee	Within 4 months
Draft an Energy Reduction Plan	City Energy Committee	Within 4 months
Compile the required documentation for Green Communities Designation Application	City Energy Committee	Within 4 months
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 4 months
1. Identification of inventory tool used	Community Development & Planning Director	Within 4 months
2. Provide documentation of results of inventory	Community Development & Planning Director	Within 4 months
3. Copy of plan / specific Actions to be implemented and timeline with milestones to achieve required energy reductions	Community Development & Planning Director	Within 4 months
4. Documentation that both the general government and school district have adopted the energy reduction plan	Community Development & Planning Director	Within 4 months

4

Procurement of Fuel Efficient Vehicles

Green Communities Criteria #4

Purchase only fuel-efficient vehicles for municipal use whenever such vehicles are commercially available and practicable.

1. Background

To qualify as a Green Community, the municipality must enact a policy to purchase only fuel-efficient vehicles for municipal use, whenever such vehicles are commercially available and practicable. The purpose behind this criterion is to reduce carbon dioxide emissions by municipal vehicles, which has a positive impact on the environment and results in costs savings for the municipality. Exempt from this policy are heavy-duty department of public works trucks, police cruisers, fire trucks and school buses. In communities that only have vehicles exempt from the policy, alternate policies to support fuel efficiency are required; such as policies that encourage municipal employees to utilize alternate transportation modes (for example, bicycle, transit) or carpooling.

2. Progress to Date

According to data provided, the City of Gardner owns approximately 86 vehicles mostly representing 11 different departments or functions within the City. Upon review of the City's inventory, approximately 28 vehicles would qualify as non-exempt vehicles and be subject to a fuel efficient vehicle policy.

Gardner does not yet have a purchasing fuel efficient vehicles policy but is interested in drafting and adopting a fuel efficient vehicle policy. The vehicle inventory will be completed with the required information by City staff and submitted as part of the forthcoming Green Communities designation application.

Upon completion of the vehicle inventory table, the fuel efficient vehicle policy (with completed inventory table) will need to be approved by the Mayor or City Council, whoever has the authority to approve such a policy. In addition, since the inventory includes non-exempt vehicles under the control of the school department, DOER

requires approval of the fuel efficient vehicle policy by the appropriate school department representative (ie, either Superintendent of Schools or School Committee) in accordance with typical city procedures.

3. Method for Meeting Criteria

Documentation
Gardner will provide a copy of the adopted Fuel Efficient Vehicle Policy as well as an inventory of existing fleet (model, year, estimated mpg) with plans for replacement with fuel efficient vehicles. See Appendix E for a draft inventory.

4. Steps completed during Assistance

- VHB provided DOER's model vehicle policy.
- Using DOER's template, VHB started the vehicle inventory table for Gardner.
- VHB documented progress on vehicle policy and plan.

5. Action Items & Schedule

Action Item	Person Responsible	Completion Date
Complete the vehicle inventory table and determine which vehicles would be subject to a Fuel Efficient Vehicle Policy	Community Development & Planning Director	Within 1 month
Adopt a Fuel Efficient Vehicle Policy	City Council/Mayor & School Department Representative	Within 1 month
Compile the required documentation for Green Communities Designation Application	Community Development & Planning Director	Within 1 month
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 1 month
1. A copy of the policy or other mechanism adopted for purchasing only fuel efficient vehicles	Community Development & Planning Director	Within 1 month
2. Inventory of existing fleet (model, year, estimated mpg) with plans for replacements with fuel efficient vehicles	Community Development & Planning Director	Within 1 month
3. Documentation that both the general government and school district have adopted the fuel efficient	Mayor and School Committee/Department Official	Within 1 month

5

Minimize Life-cycle Costs in Energy Construction

Green Communities Criteria #5

Require all new residential construction over 3,000 square feet and all new commercial and industrial real estate construction to minimize, to the extent feasible, the life-cycle cost of the facility by utilizing energy efficiency, water conservation and other renewable or alternative energy technologies.

1. Background

To qualify as a Green Community, the municipality must require all new residential construction of more than 3,000 square feet and all new commercial and industrial real estate construction to minimize the life-cycle cost of the facility by utilizing energy efficiency, water conservation and other renewable or alternative energy technologies.

One method to satisfy this criterion is to adopt the Massachusetts State Building Code's new appendix called the Stretch Energy Code (780 C.M.R. Appendix 120 AA). The Stretch Energy Code was approved as an appendix at a meeting of the Massachusetts Board of Building Regulations and Standards (BBRS) in May 2009. Based on the International Energy Conservation Code (IECC) 2009, the purpose of the Stretch Energy Code is "to provide a more energy efficient alternative to the base energy code applicable to the relevant sections of the building code for both new construction and existing buildings." For municipalities that choose to adopt this appendix, they would meet this Green Communities Program criterion. Whereas Green Community designation applies only to new residential construction over 3,000 square feet and all new commercial and industrial real estate construction, the Stretch Energy Code applies to all residential buildings of any size for both new construction and redevelopment. Another method to satisfy this criterion is to establish an alternate policy that meets the requirements of the Green Communities Program and would require approval by the DOER. At this time, model policies or

regulations that may be an acceptable alternative to adopting the Stretch Energy Code is not available from the DOER.

2. Progress to Date

The City of Gardner does not currently meet this criterion. Upon request by the City Administrator, VHB held a technical presentation on the Stretch Energy Code to the City staff including building inspectional staff, City Energy Committee members, Community Development & Planning Director, general public and building inspectors from nearby cities. The presentation highlighted the code itself in detail and associated costs. It is anticipated that the Stretch Energy Code will be brought forth before City Council for consideration in Spring or Summer of 2010.

3. Method for Meeting Criteria

Type of Method
As described in the previous section, the City of Gardner intends to adopt the Stretch Energy Code (Appendix 120 AA to the MA Building Code 780 CMR).

Documentation
Assuming adoption is successful, DOER will require documentation that the City Council approved adoption of the Stretch Energy Code.

4. Steps completed during Planning Assistance and to be completed

- VHB held a technical presentation on the Stretch Energy Code.
- VHB provided a copy of the presentation to the City for outreach use.
- Gardner (building inspectors) will attend training on the Stretch Energy Code.

5. Action Items & Schedule

Action Item	Person Responsible	Completion Date
Building Inspectors attend BBRS Stretch Energy Code training	Building Inspectors	✓
Conduct public outreach meeting on Stretch Energy Code	City Energy Committee	✓
Adopt the Stretch Energy Code at City Council	City Council	Within 3 months
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 3 months
1. Documentation of City Council vote adopting MA Board of Building Regulations and Standards (BBRS) Stretch Energy Code.	Community Development & Planning Director	Within 3 months

Summary of Action Items

Action Item	Person Responsible	Completion Date
CRITERIA #1		
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director/City Solicitor	Within 3 months
1. Letter from municipal counsel certifying that the existing zoning complies with the RE/AE Facilities criteria	Community Development & Planning Director/City Solicitor	Within 3 months
2. The applicable section of zoning bylaw/ordinance	Community Development & Planning Director	✓
3. Copy of zoning map that shows area zoned	Community Development & Planning Director	✓
4. Important zoning definitions	Community Development & Planning Director	✓
5. The relevant section of the use table and any key that will help DOER interpret the use table	Community Development & Planning Director	✓
6. Any related local regulations applicable to facilities sited under the bylaw/ordinance—such as site plan review regulations—so that DOER can confirm that the related local regulations are non-discretionary;	Community Development & Planning Director/City Solicitor	Within 3 months
7. Yield calculations must be either included in the text of the letter or attached.	Community Development & Planning Director/City Solicitor	Within 3 months
CRITERIA #2		
Compile the required documentation for Green Communities Designation Application	Grants Administrator	Within 1 month
Submit the required documentation for Green Communities Designation Application including the following materials:	Grants Administrator	Within 1 month
1. A certified copy of Gardner's City Council vote designating the as-of-right zoned parcel(s) as a Priority Development Site ("PDS")	Grants Administrator	✓
2. A copy of the applicable map(s) showing the two PDS sites	Community Development & Planning Director	✓

Action Item	Person Responsible	Completion Date
CRITERIA #3		
Attend MassEnergyInsight training session	Department of Public Works	✓
Configure MassEnergyInsight tool, review account numbers and enter 2009 fuel data for baseline	City Energy Committee	✓
Identify specific improvement opportunities	City Energy Committee	Within 4 months
Draft an Energy Reduction Plan	City Energy Committee	Within 4 months
Compile the required documentation for Green Communities Designation Application	Community Development & Planning Director	Within 4 months
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 4 months
1. Identification of inventory tool used	Community Development & Planning Director	Within 4 months
2. Provide documentation of results of inventory	Community Development & Planning Director	Within 4 months
3. Copy of plan / specific Actions to be implemented and timeline with milestones to achieve required energy reductions	Community Development & Planning Director	Within 4 months
4. Documentation that both the general government and school district have adopted the energy reduction plan	Community Development & Planning Director	Within 4 months
CRITERIA #4		
Complete the vehicle inventory table and determine which vehicles would be subject to a Fuel Efficient Vehicle Policy	Community Development & Planning Director	Within 1 month
Adopt a Fuel Efficient Vehicle Policy	City Council/Mayor & School Department Representative	Within 1 month
Compile the required documentation for Green Communities Designation Application	Community Development & Planning Director	Within 1 month
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 1 month
1. A copy of the policy or other mechanism adopted for purchasing only fuel efficient vehicles	Community Development & Planning Director	Within 1 month

Action Item	Person Responsible	Completion Date
2. Inventory of existing fleet (model, year, estimated mpg) with plans for replacements with fuel efficient vehicles	Community Development & Planning Director	Within 1 month
3. Documentation that both the general government and school district have adopted the fuel efficient	Mayor and School Committee/Department Official	Within 1 month
CRITERIA #5		
Building Inspectors attend BBRS Stretch Energy Code training	Building Inspectors	✓
Conduct public outreach meeting on Stretch Energy Code	City Energy Committee	✓
Adopt the Stretch Energy Code at City Council	City Council	Within 3 months
Submit the required documentation for Green Communities Designation Application including the following materials:	Community Development & Planning Director	Within 3 months
1. Documentation of City Council vote adopting MA Board of Building Regulations and Standards (BBRS) Stretch Energy Code.	Community Development & Planning Director	Within 3 months

Endnotes:

1 *City of Gardner Zoning Ordinance*, Section 4, Use Regulations (63), page 14.
2 *City of Gardner Zoning Ordinance*, Section 4, Use Regulations (72), page 15.
3 *City of Gardner Zoning Ordinance*, Section 10, Supplemental Regulations (72), page 79-80.
4 If a new building or new addition is completed after the baseline is established but before this action plan is fully implemented (e.g. before the City becomes a Green Community), the energy consumption of the new building or addition is to be added to the baseline. Once a City achieves Green Community status, there are no alterations to the baseline.