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# Green Communities Action Plan

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## Town of Swampscott

22 Monument Avenue  
Swampscott, MA 01907

### Prepared for:

Massachusetts Department of Energy Resources  
Green Communities Program  
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## TABLE OF CONTENTS

<b>1. INTRODUCTION .....</b>	<b>3</b>
1.1. APPLICATION .....	4
1.2. INITIAL SITE VISIT .....	4
<b>2. GREEN COMMUNITIES CRITERIA .....</b>	<b>5</b>
2.1. AS-OF-RIGHT SITING.....	5
2.2. EXPEDITED PERMITTING.....	8
2.3. ENERGY USE BASELINE INVENTORY AND REDUCTION PLAN .....	10
2.4. POLICY TO PURCHASE ONLY FUEL EFFICIENT VEHICLES.....	11
2.5. MINIMIZE LIFE-CYCLE COSTS IN ENERGY CONSTRUCTION .....	12
<b>3. CONCLUSIONS .....</b>	<b>14</b>
3.1. SUMMARY OF TASKS AND TIMELINE for 2010.....	15
<b>REFERENCES.....</b>	<b>17</b>
<b>APPENDIX A: SWAMPSCOTT ENERGY RESOLUTION 2007 .....</b>	<b>19</b>
<b>APPENDIX B: MEETING SUMMARY, SWAMPSCOTT REC, DECEMBER 22, 2009 .....</b>	<b>20</b>
<b>APPENDIX C: CRITERION 1 GUIDANCE.....</b>	<b>23</b>

# 1. INTRODUCTION

This Action Plan is designed to guide the Town of Swampscott in qualifying as a Green Community under the Massachusetts Department of Energy Resources (DOER) Green Communities Program. Qualifying communities will be eligible for the Green Communities Grant and Loan program to promote energy efficiency and alternative energy projects. Funding for this program, estimated at approximately \$10 million annually, originates from the Regional Greenhouse Gas Initiative. DOER has provided Planning Assistance to over 100 Massachusetts cities and towns to assist them in qualifying as a Green Community. This Action Plan is the result of Planning Assistance provided to the Town of Swampscott.

There are five criteria that a city or town must meet to be designated a Green Community, which were established by Massachusetts General Law Chapter 25A Section 10, effective July 2, 2008:

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

ICF International and Horsley Witten Group, Inc. (ICF/HW) were jointly contracted by DOER to provide Planning Assistance to twenty-five communities, primarily located in northeastern Massachusetts. ICF/HW provided assistance to each community over an approximate three month period. The assistance varied by community based on needs, but generally included working meetings, public meetings, ongoing communication and research, and model language (zoning language, policy language, etc.) for use in meeting the Green Community criteria. Each community was assigned a primary contact at either ICF or HW who worked closely with the community. Additional technical expertise was provided as needed to assist with specific criteria. Technical expertise from ICF was provided in the areas of energy use baseline inventories, energy use reduction plans, and the stretch energy code (Criteria 3 and 5). Expertise from HW was provided in the areas of as-of-right zoning and expedited permitting (Criteria 1 and 2).

This Action Plan describes the progress to date and the subsequent steps to be completed in order for the community to meet all five Green Communities criteria. A timeline of activities and a responsible party has been provided for each criterion, with the ultimate goal of qualifying as a Green Community within one year of the date on this Action Plan.

## 1.1. APPLICATION

The City of Salem and the Town of Swampscott submitted a joint application for technical assistance under the Green Communities Program. Although neither community submitted supporting evidence of progress toward meeting the Green Communities Criteria, both noted that they had active energy committees that would work toward meeting the Green Communities Criteria. Swampscott has the Swampscott Renewable Energy Committee (REC) and Salem has the Salem Renewable Energy Task Force (RETF).

Green Communities Criteria	Status at Time of Application
1. As-of-Right Siting	No Progress Presented in Application
2. Expedited Permitting	No Progress Presented in Application
3. Energy Use Baseline Inventory and Reduction Plan	No Progress Presented in Application
4. Policy to Purchase Only Fuel Efficient Vehicles	No Progress Presented in Application
5. Minimize life-cycle costs in energy construction	No Progress Presented in Application

## 1.2. INITIAL SITE VISIT

Ellie Baker of the Horsley Witten Group (HW) had an initial joint site visit with both the City of Salem and the Town of Swampscott on November 5, 2009. This site visit was coordinated through Neal Duffy, Swampscott Renewable Energy Committee, and Tom Watkins, City of Salem Mayor's Assistant and Salem Energy Advisory Committee member. The meeting date and attendees are included below:

### DATE OF SITE VISIT

November 5, 2009

### ATTENDEES

Victoria Masone, Swampscott REC	Tom Watkins, Salem RETF, Purchasing Agent
Tara Gallagher, Swampscott REC	Paul Marquis, Salem RETF
Neal Duffy, Swampscott REC	Cindy Keegan, Salem RETF
Milton Fistel, Swampscott REC	Adam Segal, Salem RETF
Joanne Bissetta, DOER NE Regional Coordinator	John Hayes, Salem RETF
Two additional members of the public from Salem	
Ellie Baker, HW	

The meeting began with introductions and a brief presentation about the Green Communities Grant and Technical Assistance Programs. Each community provided an update on their status in meeting each criterion. Although not reflected in the applications, both communities had been working actively toward various energy efficiency and alternative energy goals,

Neal Duffy and Tara Gallagher presented the overview of Swampscott's progress toward meeting the Green Communities criteria, and related work. The Town Board of Selectmen approved a "Town of Swampscott Energy Resolution" in December 2007. This resolution is attached (Appendix A).

Since then the Renewable Energy Committee has been meeting regularly to improve the energy efficiency and increase the use of renewable energy in Swampscott. At the time of the initial site visit, Swampscott had recently posted a Request for Proposals for a Wind Feasibility Study, but subsequently

learned in January, 2010 that they were not awarded the grant funding for this study. University of Massachusetts Renewable Energy Research Laboratory (RERL) also did a basic Wind Feasibility Study that looked at four potential areas to site wind on municipal properties in the town. They are also pursuing a roof-top solar project at one of the local schools. They were drafting a wind bylaw following the previously available DOER model bylaw for wind energy generation facilities that incorporated a special permit process. Swampscott noted that they intend to do a baseline energy inventory over the following three months for municipal buildings. The town signed an Energy Services Contract (ESCO) agreement on October 1, 2009 with Johnson Controls, and will coordinate their baseline inventory and reduction plan with the ESCO work. The REC was also working toward adoption of the Stretch Code in light of the ongoing design of a new Police Station, which they hoped would be LEED certifiable and compliant with the Stretch Code. The Town subsequently voted down the override to fund this Police Station project at this time. The current building inspector is also a HERS rater so he is familiar with the process. Swampscott was particularly interested in getting technical assistance to assist the town in passing the Stretch Code. They want support in outreach and education to local builders and to the local decision-making boards and commissions.

Salem and Swampscott agreed to employ regional approaches involving both communities when it was economical to do so, and when representatives from both communities felt they could benefit most from joint technical assistance. However, in meeting some criteria, both communities agreed that it made more sense to receive individual technical assistance. These criteria include Criteria 1, 2, 3 and 4. Criterion 5 seemed to lend itself to a joint education and outreach effort, particularly since some builders work in both communities. The initial kick-off meeting was held jointly between Salem and Swampscott so that both communities could learn from the recent efforts each was undertaking. They agreed to receive emails jointly, to communicate via email on technical questions, and to participate in several subsequent events together. These were: 1) the group question and answer webinar on the Stretch Code, put on by ICF/HW on December 25, 2009; 2) an educational session about the Stretch Code aimed at the building community; and 3) a final meeting during which ICF/HW will present the final Action Plans.

## 2. GREEN COMMUNITIES CRITERIA

The following section includes a review of each of the five Green Community criteria with a description of the progress made to date, the methodology proposed for meeting the criteria as well as any remaining task(s) to be completed to fulfill the Green Communities requirements. Each of these task(s) identifies steps the community will take to fulfill the requirements, the person(s) and/or municipal boards responsible for tasks, and the timeline for completion. The Action Plan outlined below is also presented in a matrix format in Section 3.1, for easy reference.

### 2.1. AS-OF-RIGHT SITING

#### BACKGROUND

The first Green Communities criterion states that a city or town must *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.*

- As-of-right siting is defined as siting that provides for the allowed use of, and does not reasonably regulate, or require a special permit.
- An applicant can meet this requirement by providing as-of-right siting for one of the three types of facilities described.
- If a community has as-of-right siting in place for R&D and/or manufacturing facilities in general, this can meet the requirement, but the community must demonstrate that the zoning bylaw applies to renewable and alternative energy R&D or manufacturing.
- An applicant providing as-of-right siting for R&D and/or manufacturing must show that land is available for the construction of a facility or facilities of 50,000 square feet or larger in the aggregate. Zoning districts with previously developed but vacant or underutilized structures or sites are preferred over those that would site clean energy facilities on land that is currently wooded, actively farmed, otherwise undeveloped.
- An applicant can meet this requirement with as-of-right siting for renewable or alternative energy generation with one of the following project requirements:
  - On-shore wind: a turbine of a minimum 600 kW in size or above
  - Off-shore wind: a turbine of a minimum 2.5 MW or above
  - Solar Photovoltaic: a single ground-mounted system of a minimum of 250kW or above
  - Biomass CHP: a minimum of 5 MW in a stand-alone building
  - Ocean, wave, or tidal: no minimum threshold

Additional details on this requirement are included in the ***Guidelines for Qualifying as a Green Community*** and three guidance documents developed by DOER to provide details on meeting requirements for Wind, Large-Scale PV, and R&D and Manufacturing.

## PROGRESS TO DATE

Prior to the Planning Assistance award, the Town of Swampscott had not addressed this criterion. The town had begun to draft a wind bylaw using the special permit process, as presented in the previously available DOER model bylaw for wind energy generation facilities, but had put that work aside in 2008 to focus on other efforts. The town asked ICF/HW to focus assistance on this criterion.

## METHOD FOR MEETING

The town was initially interested in pursuing a wind generation bylaw modeled after the DOER model bylaw, using a wind overlay district to allow wind generation in several areas of town. However, after the town was informed that they did not receive a grant from Massachusetts Technology Collaborative for a wind feasibility study, they changed course to move forward with allowing Research and Development facilities for the alternative energy sector in selected districts.

- R&D/Manufacturing: The town does not currently allow R&D by-right in any zone in town. Swampscott was concerned that it may be an unlikely selected location for R&D given the lack of direct transportation routes into and out of town. Because they were already considering a wind generation bylaw at the initiation of the technical assistance grant, the group initially decided not to pursue R&D. However, following difficulties in pursuing a wind feasibility study to identify potential wind locations in town, the group opted to explore R&D again.
- Solar: The town does not have suitable open space available to allow for a ground mounted solar array, due to the level of existing development as well as restrictions on uses of open space and restrictions on clearing of land (i.e., Chapter 91, conservation restrictions).

- Wind: The town was initially pursuing wind generation by-right on a few select parcels in towns. However, upon notice that they were not awarded a grant to perform a feasibility study for wind turbines, the town opted to pursue R&D instead.
- Biomass Energy: Generally, a 5MW plant requires 40,000-60,000 tons of wood per day (roughly 5 truckloads). Lacking available wood resources within 50 miles, it is unlikely this would be an economical approach in Swampscott.
- Ocean Energy: The group felt it was premature to establish an as-of-right process for this application without more guidance and a better understanding of the issues.
- Offshore Energy: The group felt it was premature to establish an as-of-right process for this application without more guidance and a better understanding of the issues.

In order to meet this requirement, the Town will draft language to amend the existing zoning bylaw to allow for R&D facilities associated with the alternative energy industry within certain applicable district(s). These facilities will not be required to pursue Site Plan Special Permit approval as currently described in the zoning. Instead, they may follow a Special Permit process that would be created for this specific use and/or zone.

## STEPS COMPLETED DURING ASSISTANCE

- ICF/HW provided guidance regarding the requirements for as-of-right siting of alternative/renewable energy generation or R&D/manufacturing facilities during the initial site visit on November 5, 2009. The town's zoning currently does not allow manufacturing or R&D as-of-right anywhere in town, and the town initially expressed interest in pursuing a wind generation bylaw.
- ICF/HW provided technical assistance through the dissemination and discussion of the following guidance documents, materials, and/or information:
  - The DOER guidance materials: ***Model As-of-Right Bylaw – Wind, Model As-of-Right Bylaw – Large Scale PV, Guidance on As-of-Right Bylaw – R&D and Manufacturing***
- ICF/HW provided guidance via email discussion to the REC related to understanding this criterion.
- ICF/HW prepared for and participated in a working session with the REC on December 22, 2009 to focus primarily on meeting Criteria 1 and 2. This meeting was posted as a regular public meeting of the REC, although no members of the public attended. Minutes from the meeting are attached in Appendix B. In preparation for the meeting, ICF/HW asked the REC to provide a list of specific questions that they would like to discuss, and ICF/HW provided brief written responses to the group prior to the meeting, and then used that document as a tool for discussion at the meeting. During this meeting, we reviewed all other options for meeting Criterion 1 (e.g., solar generation, alternative/renewable energy R&D and manufacturing, etc.) . The decision at the conclusion of this meeting was to pursue as-of-right siting through the development of a wind generation overlay zone and bylaw.
- ICF/HW provided a memorandum describing a detailed yield calculation process to meet Criterion 1 (See Appendix C).
- In early January, the town was notified that they would not be awarded a grant from the MTC for a wind feasibility study. At this time, REC members also had the opportunity to discuss and learn from members of other communities about their experiences with wind generation bylaws. All of these communities were pursuing or had special permit processes to allow for wind facilities rather than allowing them by-right. Based on these discussions and a concern about a lack of control in allowing by-right wind facilities, the REC turned to evaluating the option of allowing by-right R&D instead of wind facilities. ICF/HW discussed this issue with the REC lead for this criterion, and

provided guidance on how to proceed with this option. Specifically, ICF/HW provided guidance via email and telephone regarding several options for changing the zoning to allow for R&D by-right. The REC opted for the simplest approach, and ICF/HW provided final guidance via email on February 7, 2010.

- Victoria Masone, Public Works Department and REC member, has been working to develop a yield analysis to evaluate the availability of 50,000 square feet of commercial space for R&D in the applicable zones.

## STEPS TO BE COMPLETED

Task	Date to be Completed
1A: Draft language to amend the existing zoning bylaw to allow for R&D facilities by-right in selected district(s).	February 2010
1B: Presentations to Planning Board, Zoning Board of Appeals, City Council and other appropriate boards/committees for support.	February/March 2010
1C: Submit warrant language for R&D zoning amendment and hold public hearing.	March 2010
1D: Approval of zoning amendment at Spring Town Meeting.	May 2010

## PERSON RESPONSIBLE

The tasks under this criterion will be undertaken by Tara Gallagher, of the REC, with the Planning Board and Zoning Board of Appeals.

## 2.2. EXPEDITED PERMITTING

### BACKGROUND

The second Green Communities criterion states that a city or town must *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.*

- The expedited application and permitting process applies only to the proposed facilities which are subject to the as-of-right siting provision.
- An applicant can meet this requirement by applying the expedited permitting process of MGL c 43D to these zoning districts.
- The one (1) year deadline requirement must include an effective enforcement mechanism, such as constructive approval provision.

Additional details on this requirement are included in the *Guidance on Expedited Permitting* document developed by DOER.

### PROGRESS TO DATE

The Town of Swampscott does not currently have an expedited permit program.



## METHOD FOR MEETING

Swampscott intends to meet Criterion 2 by first amending the necessary local bylaws, as described below, and then providing a letter from legal counsel affirming conformance with the expedited permitting requirements and providing:

- Language of any applicable local site plan review bylaw that covers approval procedures and associated timing;
- Text of bylaws or regulations that provide for constructive approval as an enforcement mechanism, should any issuing authority fail to act within one year;
- A statement that nothing else within the town's rules and regulations precludes issuance of a permitting decision within one year.

In order to meet this requirement, the Town will include a constructive approval clause in the amendments proposed for Criterion 1 to allow R&D as-of-right in the selected district(s). The Town will also review other existing permit processes that may be triggered by an R&D use within the selected zone, and draft language to incorporate constructive approval language if needed. The Town should also review the permit processes to ensure that those local permits can be processed concurrently with the site plan review process such that they can all be completed within a 1 year timeframe.

## STEPS COMPLETED DURING ASSISTANCE

- ICF/HW provided guidance regarding the requirements for expedited permitting for as-of-right alternative/renewable energy generation of R&D/manufacturing facilities during the initial site visit on November 5, 2009.
- ICF/HW provided technical assistance through the dissemination and discussion of the following guidance documents, materials, and/or information:
  - The DOER guidance document on **Expedited Permitting Options** and,
  - Links to Chapter 43D Web site and additional 43D materials.
- ICF/HW provided guidance via email discussion to the REC related to understanding this criterion.
- ICF/HW prepared for and participated in a working session with the REC on December 22, 2009 to focus primarily on meeting Criteria 1 and 2. This meeting was posted as a regular public meeting of the REC, although no members of the public attended. Minutes from the meeting are attached as Appendix B. In preparation for the meeting, ICF/HW asked the REC to provide a list of specific questions that they would like to discuss, and ICF/HW provided brief written responses to the group prior to the meeting, and then used that document as a tool for discussion at the meeting. During this meeting, we discussed the expedited permit process and briefly discussed the differences between adopting MGL Chapter 43D and creating a local expedited permit process.

## STEPS TO BE COMPLETED

Task	Date to be Completed
2A: Draft code changes to ensure expedited permitting.	February 2010
2B: Presentations to Planning Board, Zoning Board of Appeals, City Council and other appropriate boards/committees for support.	February/March 2010
2C: Submit warrant language and hold public hearing.	March 2010
2D: Approval at Spring Town Meeting.	May 2010

## PERSON RESPONSIBLE

The tasks under this criterion will be undertaken by Tara Gallagher, REC, and Victoria Masone, Public Works Department and REC.

## 2.3. ENERGY USE BASELINE INVENTORY AND REDUCTION PLAN

### BACKGROUND

The third Green Communities criterion states that a city or town must *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.*

- Energy use baseline is applied in aggregate across building, street lights and vehicles on an MMBTU (million British thermal units) basis.
- AFTER all energy reduction measures have been taken, credit may be given for the addition of renewable energy resources to reach the 20% reduction goal.
- A community can meet this requirement if it has completed an inventory as described above and has already implemented a program to reduce the baseline within the previous 24 months.
- Acceptable tools for performing the inventory are:
  - EnergyStar Portfolio Manager;
  - ICLEI software;
  - DOER's Energy Information Reporting System; and
  - Other tools proposed by the community and deemed acceptable by DOER.

Additional details on this requirement are included in the ***Guidelines for Qualifying as a Green Community*** and the ***Guidance and Model Outline for 20% Energy Reduction Plan*** document developed by DOER.

### PROGRESS TO DATE

The Town of Swampscott signed an ESCO agreement on October 1, 2009 with Johnson Controls to review energy use from street lights, park lighting and nine municipal buildings. They preliminarily identified opportunities for energy savings of 19%, and recently revised that up to 20%. Buildings that were not included in the contract include buildings that the town is trying to sell or that are vacant, as well as the pumping station (currently being addressed through a project with National Grid), the police station (the town is currently considering whether to build a new one), and traffic lights, which have already been converted to LED lights. In addition, the Town has a tracking system in place to track vehicle fuel use for all municipal vehicles and they know they spent \$107,319 on fuel costs for vehicles in FY08. Therefore, a lot of the data for a baseline inventory have been developed but the town has not created a comprehensive baseline inventory. The Town is also pursuing public education about energy conservation, the possibility of placing solar panels on the public high school, and other tools to reduce energy use. The town initially indicated that they would like to receive technical assistance on data organization and tracking, but this was not pursued due to prioritizing of Criteria 1, 2 and 5.

### INVENTORY TOOL USED OR PLANNED TO BE USED

The Town of Swampscott plans to use DOER's Mass Energy Insight tool to track energy use information for municipal buildings, street and traffic lighting, and vehicles.

## STEPS COMPLETED DURING ASSISTANCE

- ICF/ provided guidance to the Town of Swampscott regarding the requirements of the energy use inventory and reduction plan during the initial site visit on November 5, 2009, and within follow-up emails. Technical assistance included dissemination and discussion of the following guidance documents, materials and/or information:
  - The DOER guidance document, ***Guidance and Model Outline for 20% Energy Reduction Plan.***
  - The benefits and drawbacks of the different inventory tools, as well as the launch timeline for the DOER EIRS tool.

## STEPS TO BE COMPLETED

Task	Date to be Completed
3A: Attend Mass Energy Insight training	February/March 2010
3B: Prepare a Baseline Energy Use Inventory.	March 2010
3C: Prepare an Energy Reduction Plan.	April 2010

## PERSON RESPONSIBLE

The tasks under this criterion will be undertaken by Victoria Masone, of the DPW and REC, with support from the REC.

## 2.4. POLICY TO PURCHASE ONLY FUEL EFFICIENT VEHICLES

### BACKGROUND

The fourth Green Communities criterion states that a city or town must ***purchase only fuel-efficient vehicles for municipal use whenever such vehicles are commercially available and practicable.***

- Heavy-duty vehicles such as fire-trucks, ambulances, and public works trucks are exempt from this criterion.
- Police cruisers are exempt from this criterion. However, municipalities must commit to purchasing fuel efficient cruisers when they become commercially available. Police department administrative vehicles must meet fuel efficient requirements.
- An applicant must provide a vehicle inventory for non-exempt vehicles and a plan for replacing these vehicles with vehicles that meet the fuel efficiency ratings below. These fuel efficiency ratings are set to ensure that at least 5 or more automatic transmission models of mass production are available for sale in Massachusetts (all from affordable brands; no luxury brands). Based on 2009 and 2008 EPA data, vehicles are to have combined city and highway MPG no less than the following:
  - 2 wheel drive car: 29 MPG
  - 4 wheel drive car: 24 MPG
  - 2 wheel drive small pick-up truck: 20 MPG
  - 4 wheel drive small pick-up truck: 18 MPG
  - 2 wheel drive standard pick-up truck: 17 MPG
  - 4 wheel drive standard pick-up truck: 16 MPG

Additional details on this requirement are included in the ***Guidelines for Qualifying as a Green Community*** and the ***DOER Fuel Efficient Vehicles Spreadsheet.***

## PROGRESS TO DATE

The Town of Swampscott has not yet drafted a fuel efficient vehicle procurement policy. The Town Board of Selectmen also adopted an Energy Resolution (Appendix A) in 2007 that is consistent with a fuel efficient vehicle procurement policy.

## STEPS COMPLETED DURING ASSISTANCE

- ICF/HW provided guidance to the Town of Swampscott regarding the requirements for a fuel efficient vehicle policy during the initial site visit on November 5, 2009. The Town noted that they did not need any technical assistance on this criterion.

## STEPS TO BE COMPLETED

Task	Date to be Completed
4A: Create an inventory of all town-owned vehicles that are not exempt from this Criterion. Then draft a basic plan to replace all vehicles over time as needed with fuel efficient vehicles.	April 2010
4B: The appropriate responsible agencies of town government must adopt a fuel efficient vehicle purchasing policy as described above.	May 2010

## PERSON RESPONSIBLE

The tasks under this criterion will be undertaken by Wayne Spritz, REC, with support from the REC.

## 2.5. MINIMIZE LIFE-CYCLE COSTS IN ENERGY CONSTRUCTION

### BACKGROUND

The fifth Green Communities criterion states that a city or town must *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.*

- Cities and towns can meet this requirement by adopting the new BBRS Stretch Code, the new appendix to the MA State Building Code. Should a community choose not to adopt the stretch code and choose another standard, the community must provide evidence that this alternative standard minimizes the life-cycle energy costs for all new construction and is enforceable by the community.
- The Stretch Code is an optional appendix to the Massachusetts building energy code that allows cities and towns to choose a more energy-efficient option. This Stretch Code option increases the energy efficiency code requirements in any municipality that adopts it, for all new residential and many new commercial buildings, as well as for those residential additions and renovations that would normally trigger building code requirements.

Additional details on the Stretch Code are available through a number of documents available on the DOER Green Communities web site, and cited in the **References** section of this report.

## PROGRESS TO DATE

Swampscott is interested in pursuing the adoption of the stretch energy code; however the Town feels that education and outreach is needed for local officials, the public and the building community in order to proceed. Prior to this Planning Assistance award, the REC discussed the Stretch Code with the Building Inspector and briefed the Board of Selectmen about the Stretch Code. They were hoping that the Stretch Code could be adopted prior to the final design of the Police Department building so that the building could incorporate the energy efficiencies. However, the REC and Building Inspector decided to wait for the BBRS trainings for building inspectors prior to moving forward with adoption.

## METHOD FOR MEETING

Swampscott intends to meet Criterion 5 through adoption of the stretch energy code.

## STEPS COMPLETED DURING ASSISTANCE

- ICF/HW provided guidance to the Town of Swampscott regarding the Stretch Energy Code during the initial site visit on November 5, 2009, and within follow-up emails and conference calls. Technical assistance included dissemination of the following guidance documents, materials and/or information:
  - The DOER guidance materials: ***Stretch Code Overview, Stretch Code Summary Table, Residential Code - Cash Flow Analysis, Urban Residential Renovation - Cash Flow Analysis, Frequently Asked Questions.***
- ICF/HW hosted a joint Q&A session on the Massachusetts Stretch Code for all communities on December 15, 2009. The session was designed to answer questions facing municipal decision makers, building inspectors and other key local stakeholders regarding adoption of the Stretch Code. Communities could participate in person or via Webinar. The Webinar was also recorded and made available as a downloadable file, for the purpose of distributing as a reference tool. Participating individuals included: Tara Gallagher and Neal Duffy of the REC.
- The REC presented information about the Stretch Code during a public meeting of the Board of Selectmen in November, 2009.
- The Board of Selectmen, Planning board, Zoning Board of Appeals, Building Inspector and Town Administrator were all invited to the February 11, 2010 presentation of this Action Plan report and the March 2, 2010 information session aimed at the local building community.
- The Building Inspector has signed up for the new BBRS energy code trainings this spring.
- ICF/HW worked jointly with Salem and Swampscott to plan an information session aimed at educating the local building community. This session was coordinated by the two communities, both of whom reached out to local builders and architects to inform them directly of the workshop. The workshop is planned for March 2 at 5:30 pm in Salem. ICF/HW will be providing the technical training at this workshop.

## STEPS TO BE COMPLETED

Task	Date to be Completed
5A: Hearing and potential Board of Selectman Vote.	February, 2010
5B: Additional Stretch Code presentations to public and to Town boards and committees.	February/March/April 2010
5C: Public Meeting for Swampscott/Salem Building Community	March 2, 2010
5D: Submit warrant language and hold public hearing.	March ,2010
5E: Stretch Code Approval at Spring Town Meeting.	May, 2010

## PERSON RESPONSIBLE

This Criterion is being undertaken by Neal Duffy, REC, with support from the REC.

## 3. CONCLUSIONS

As evidenced by this Action Plan and previous sustainability accomplishments, the Town of Swampscott has demonstrated its commitment to a greener energy future. Through the Planning Assistance program, the Town of Swampscott has taken many steps that have positioned it to become designated as a Green Community. The table on the following page presents a summary of remaining tasks to be completed in order to meet all five Green Community criteria, along with a targeted timeline for completion. This final plan will be presented to the Town of Swampscott REC at a joint meeting with the City of Salem RETF on February 11, 2010. This meeting will serve as an opportunity for the two communities to learn from each other and discuss future opportunities to work together to promote energy efficiency and alternative energy generation.

As part of the Planning Assistance application, all communities were required to submit a letter of commitment, stating that they would strive to meet all five Green Community criteria within one year of the delivery of this Action Plan. The Town of Swampscott is on track to meet this commitment, and may be prepared to qualify as a Green Community as early as May, 2010.

A community is eligible to apply for funding under the Green Communities Grant and Loan program once they receive formal Green Community Designation from DOER. In order to demonstrate compliance with all five of the Green Communities Criteria, a community must complete and submit to DOER a Green Communities Designation Form, along with all supporting documentation. The deadline for submitting a Designation Form for eligibility for the FY10 grant round is May 14, 2010. The deadline for FY10 grant applications is May 28, 2010. There will be subsequent opportunities to submit these forms for future funding cycles, but the schedule has yet to be set. The Designation Form and Draft Application Form are listed in the references section of this report.

### 3.1. SUMMARY OF TASKS AND TIMELINE for 2010

Criteria	Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1A: Draft language to amend the existing zoning bylaw to allow for R&D facilities by-right in selected district(s).												
	1B: Presentations to Planning Board, Zoning Board of Appeals, City Council and other appropriate boards/committees for support.												
	1C: Submit warrant language for R&D zoning amendment and hold public hearing.												
	1D: Approval of zoning amendment at Spring Town Meeting.												
2	2A: Draft code changes to ensure expedited permitting.												
	2B: Presentations to Planning Board, Zoning Board of Appeals, City Council and other appropriate boards/committees for support.												
	2C: Submit warrant language and hold public hearing.												
	2D: Approval at Spring Town Meeting.												
3	3A: Attend Mass Energy Insight training.												
	3B: Prepare a Baseline Energy Use Inventory.												
	3C: Prepare an Energy Reduction Plan.												
4	4A: Create an inventory of all town-owned vehicles that are not exempt from this Criterion. Then draft a basic plan to replace all vehicles over time as needed with fuel efficient vehicles.												
	4B: The appropriate responsible agencies of town government must adopt a fuel efficient vehicle purchasing policy as described above.												
5	5A: Hearing and potential Board of Selectman Vote.												
	5B: Additional Stretch Code presentations to public and to Town boards and committees.												
	5C: Public Meeting for Swampscott/Salem Building Community												

Criteria	Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	5D: Submit warrant language and hold public hearing.												
	5E: Stretch Code Approval at Spring Town Meeting.												
All	Complete and submit Green Communities designation application to DOER, with all required documentation.												
	Complete and submit Green Communities grant application to DOER.												



## REFERENCES

The reference materials below are available to assist communities in meeting the Green Communities criteria. Many of the materials are available on the Green Communities Web site ([www.mass.gov/energy/greencommunities](http://www.mass.gov/energy/greencommunities)) as part of the Green Communities toolkit. Others are available through other Web sites, or upon request from a Green Communities representative.

### General

- Guidelines for Qualifying as a Green Community  
[www.mass.gov/Eoeea/docs/doer/gca/FINAL%20GC%20Qual%20Criteria%2071009.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/FINAL%20GC%20Qual%20Criteria%2071009.pdf)
- Green Communities Designation Form and Instructions  
[www.mass.gov/Eoeea/docs/doer/gca/Guidance%20for%20GC%20designation%20application%20FINAL.doc](http://www.mass.gov/Eoeea/docs/doer/gca/Guidance%20for%20GC%20designation%20application%20FINAL.doc)
- Green Communities Grant Program – FY 10 Application (DRAFT)  
[www.mass.gov/Eoeea/docs/doer/gca/Green%20Communities%20Grant%20Program%20Draft%20FINAL.doc](http://www.mass.gov/Eoeea/docs/doer/gca/Green%20Communities%20Grant%20Program%20Draft%20FINAL.doc)

### Criterion 1: As-of-Right Siting

- Model As-of-Right Bylaw – Wind  
[www.mass.gov/Eoeea/docs/doer/gca/gc-model-wind-bylaw-mar-10-2009.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/gc-model-wind-bylaw-mar-10-2009.pdf)
- Model As-of-Right Bylaw – Large Scale PV  
[www.mass.gov/Eoeea/docs/doer/gca/Solar\\_Model\\_Bylaw%20FINAL%20Sept%2009.doc](http://www.mass.gov/Eoeea/docs/doer/gca/Solar_Model_Bylaw%20FINAL%20Sept%2009.doc)
- Guidance on As-of-Right Bylaw – R&D and Manufacturing  
[www.mass.gov/Eoeea/docs/doer/gca/RD%20or%20manuf%20AOR%20guidance-11-12-09.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/RD%20or%20manuf%20AOR%20guidance-11-12-09.pdf)

### Criterion 2: Expedited Permitting Process

- DOER Guidance on Expedited Permitting  
[www.mass.gov/Eoeea/docs/doer/gca/gc-guidance-criteria2.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/gc-guidance-criteria2.pdf)
- Chapter 43D Expedited Permitting Web site  
[www.mass.gov/?pageID=ehedsubtopic&L=4&L0=Home&L1=Start%2C+Grow+%26+Relocate+Your+Business&L2=Licensing+%26+Permitting&L3=Chapter+43D+Expedited+Permitting&sid=Ehed](http://www.mass.gov/?pageID=ehedsubtopic&L=4&L0=Home&L1=Start%2C+Grow+%26+Relocate+Your+Business&L2=Licensing+%26+Permitting&L3=Chapter+43D+Expedited+Permitting&sid=Ehed)
- 2009 Chapter 43D Application  
[www.mass.gov/Ehed/docs/permitting/chapter43d/2009\\_chapter\\_43d\\_application.doc](http://www.mass.gov/Ehed/docs/permitting/chapter43d/2009_chapter_43d_application.doc)
- A Best Practices Model for Streamlined Local Permitting  
[www.mass.gov/Ehed/docs/permitting/permitting\\_bestpracticesguide.pdf](http://www.mass.gov/Ehed/docs/permitting/permitting_bestpracticesguide.pdf)
- Municipal Self Assessment Checklist  
[www.mass.gov/Ehed/docs/permitting/chapter43d/muni\\_checklist.doc](http://www.mass.gov/Ehed/docs/permitting/chapter43d/muni_checklist.doc)

### Criterion 3: Energy Baseline and Plan for 20% Reduction

- Sample Energy Reduction Plan Outline  
[www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20GREEN%20COMMUNITIES%20CRITERIA%20THREE%20FINAL.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20GREEN%20COMMUNITIES%20CRITERIA%20THREE%20FINAL.pdf)

### Criterion 4: Fuel Efficient Vehicles

- Guidance and Model Policy for Purchasing Only Fuel Efficient Vehicles

[www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20GC%204%20-%20Vehicles%20SEPT%2009.doc](http://www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20GC%204%20-%20Vehicles%20SEPT%2009.doc)

- Fuel Efficient Vehicles Spreadsheet  
[www.mass.gov/Eoeea/docs/doer/gca/gc-2009-epa-fe-guide.xls](http://www.mass.gov/Eoeea/docs/doer/gca/gc-2009-epa-fe-guide.xls)

**Criterion 5: Minimize Life Cycle Costs (Stretch Code)**

- Stretch Code Overview  
[www.mass.gov/Eoeea/docs/doer/gca/stretch\\_code\\_overview\\_052909.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/stretch_code_overview_052909.pdf)
- Stretch Code Summary Table  
[www.mass.gov/Eoeea/docs/doer/gca/Stretch%20codes%20summary%20table%20072809.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/Stretch%20codes%20summary%20table%20072809.pdf)
- Stretch Code Frequently Asked Questions  
[www.mass.gov/Eoeea/docs/doer/gca/Stretch%20Energy%20Code%20FAQ%2010-30-09.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/Stretch%20Energy%20Code%20FAQ%2010-30-09.pdf)
- Stretch Code Webinar (also available as an audio recording)  
[www.mass.gov/Eoeea/docs/doer/gca/MA%20stretch%20code%20Wed19%20webinar.pdf](http://www.mass.gov/Eoeea/docs/doer/gca/MA%20stretch%20code%20Wed19%20webinar.pdf)
- Appendix 120 AA July 9, 2009 Final  
[www.mass.gov/Eeops/docs/dps/inf/appendix\\_120\\_aa\\_jul09\\_09\\_final.pdf](http://www.mass.gov/Eeops/docs/dps/inf/appendix_120_aa_jul09_09_final.pdf)

## APPENDIX A: Swampscott Energy Resolution 2007



### Town of Swampscott

OFFICE OF THE

### Board of Selectmen

ELIHU THOMSON ADMINISTRATION BUILDING

SWAMPSCOTT, MASSACHUSETTS 01907

Adam P. Forman, Chair  
Anthony A. Scibelli, Vice Chair  
Marc R. Paster  
Jill G. Sullivan  
Eric A. Walker

Andrew W. Maylor  
Town Administrator

(781) 596-8850  
FAX (781) 596-8851

#### TOWN OF SWAMPSCOTT ENERGY RESOLUTION

*WHEREAS, a scientific consensus has developed that Carbon Dioxide (CO<sub>2</sub>) and other Greenhouse Gases (GHG) released into the atmosphere have a profound effect on the climate and our environment;*

*WHEREAS, energy consumption, specifically the burning of fossil fuels (i.e. coal, oil and gas) accounts for more than 80% of U.S. Greenhouse Gas (GHG) Emissions;*

*WHEREAS, the environmental impact of a product or process is measured in industry using GHG emissions as CO<sub>2</sub> equivalents (CO<sub>2</sub>e), and can easily be calculated from existing energy use and product consumption data;*


*WHEREAS, local governments influence their community's energy use by exercising key powers over land use, transportation, building construction, waste/recycling management, procurements, and energy supply and its management; and*

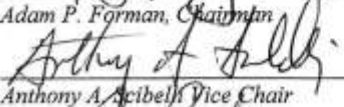
*WHEREAS, a sound energy policy and sound government go hand-in-hand;*

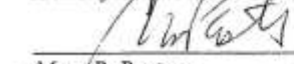
*NOW THEREFORE, BE IT RESOLVED, that the Town of Swampscott pledges to take a leadership role to promote measures that will reduce greenhouse gas emissions through supporting energy conservation, energy efficiency, renewable energy installations (i.e. wind power, solar power, and geothermal systems) where feasible, and including energy use guidelines in contract procurements.*


*BE IT FINALLY RESOLVED, which the Town of Swampscott will strive to reduce its Greenhouse Gas Emissions by 12% by 2014 and 20% by 2020, as measured from the 2005 benchmark.*


#### BOARD OF SELECTMEN

  
Adam P. Forman, Chairman

  
Anthony A. Scibelli, Vice Chair

  
Marc R. Paster

  
Jill G. Sullivan

  
Eric A. Walker

## APPENDIX B: Meeting Summary, Swampscott REC, December 22, 2009

### Minutes of December 22, 2009 Meeting of the Swampscott Renewable Energy Committee

**Attendees:** Neal Duffy, Milton Fistel, Tara Gallagher, Wayne Spritz

**Additional Attendees from Horsley, Witten, Inc.:** Ellie Baker, Doug McLean

**Next Meeting:** To be determined.

**Green Community Act (GCA) Status:** The purpose of this meeting was to hear from Ellie Baker and Doug McLean, of Horsley, Witten, Inc., regarding their recommendations on GCA criteria #1 and 2. The meeting was extremely helpful and we are very grateful for their help and insights.

1. Possible Applications for as-of-right siting. We need to be able to articulate why we are choosing a wind bylaw to meet this criteria and not one of the other applications. These are the reasons:
  - a. Solar: it seems we do not have the two acres necessary to pursue this approach. We can confirm this through GIS. We can further explain that some of the land we have that may be more than two acres has conflicting uses that would be incompatible with clearcutting for solar. (ie. Jackson Park is Article 97 Conservation Land) Note: Milton offered to work with Vicky on the various GIS work items.
  - b. Off-shore Wind: We were uncertain about the ownership (Marblehead, Swampscott, Nahant, federal waters?) of some of the water off of Swampscott. We can confirm these constraints through GIS and Ellie and Doug felt these considerations would be an adequate reason for not pursuing this approach.
  - c. Ocean, wave, tidal: We feel it is premature to establish an as-of-right process for these applications without more guidance and a better understanding of the issues.
  - d. Biomass CHP: Generally, a 5MW plant requires 40,000-60,000 tons of wood per day (roughly 5 truckloads). Lacking available wood resources within 50 miles, it is unlikely this would be an economical approach in Swampscott.
  - e. R&D and Manufacturing: 50,000 sq. ft. must be available but not necessarily all in one place. We agreed it would be unlikely that a manufacturer would find non-contiguous commercial space in Swampscott, a town with difficult transportation routes in and out, to be attractive.
  - f. That leaves the option of adopting an as-of-right zoning bylaw that would allow commercial scale wind projects (greater than 660 KW) in a few discrete overlay parcels.
2. WIND: Ellie and Doug's recommendations on wind:
  - a. If we want to be part of the first round of GCA funding, we should just go with a bylaw addressing commercial scale (660 KW+) wind now. Address smaller scale wind at a later date.
  - b. We had done significant research on available wind locations prior to our UMASS RERL study. The Philips park location likely wouldn't support a commercial scale turbine. The other locations (Tedesco behind MS, Jackson Park including the lip of the quarry) would. Consultants recommended including these.

- c. An additional location would be land along the quarry further from the HS. Dorothy had highlighted this area on her emailed map. Our initial evaluation considered proximity to a municipal load. Net metering is fine now and we are also considering privately owned turbines for this overlay district. This additional location makes sense.
  - d. Consultants recommended weighing the number of locations against the political will of the town. Consider whether more sites will complicate the process of adoption of the overlay district or not. However, consultants recommended identifying more than one site in the overlay so as to increase the overall feasibility of wind generation in town, and in case that site turns out to be infeasible for some unpredicted reason. For the purposes of GCA, you must allow for commercial size turbines (>600 kW) and many of the additional sites we could consider would not support commercial scale wind turbines, so those do not necessarily have to be included in the overlay at this time. If we did choose to include smaller scale wind, we would want to differentiate between smaller and larger turbines to define where the large ones would be allowed and where the smaller ones would be allowed (assuming smaller ones would be allowed in a broader area).
- 3. Wind Next Steps:
  - a. Make sure there is no wetland, floodplain or coastal zone overlap into any of the overlay district parcels.
  - b. How far out to draw the boundary of the overlay parcels? We discussed whether to draw the overlay parcel boundary to the edge of the parcel or to include a smaller radius around the most likely turbine location in the center of the parcel. Subsequent to the meeting, Ellie and Doug recommended that we draw include the entire parcel in the overlay district unless it raises political difficulties.
  - c. Local zoning: Wind is not designated as an explicit use so current applicants would have to get a variance. This does not meet GCA. We need to adopt an overlay zoning district and wind bylaw. We cannot use the previous DOER model which involved a special permit. The new model is an as-of-right approach that meets GCA.
  - d. What setback from residences should we use? DOER recommends three times the blade tip height. This is conservative and arbitrary. Ellie will let us know what other towns are considering. Their current recommendation is that we consider a setback in the range of 2-3 times the blade tip height from all habitable buildings. (This would include schools, not just residences.) They suggested starting with our possible turbine locations and the current setbacks and working backward from there.
  - e. The bylaw must articulate how issues such as ice throw, noise, and flicker can be addressed.
- 4. Expedited Permitting:
 

The GCA requires that we establish an expedited permitting process that would guarantee a final decision on a turbine application within one year from the submission of a completed application. Standards that would need to be met would be articulated in the zoning by-right amendment.

  - a. The expedited permitting approach in C. 43D is not appropriate here.
  - b. Language from Swampscott's Site Plan Review process for commercial operations (Section 4.0) appears to meet this requirement. "Failure of the Planning Board to take action upon an application within sixty (60) days of the Town Clerk's date stamp (receipt of a complete application) shall be deemed approval of said application." (Unless Section 1.3 (iii)

- precludes the application of this site plan review requirement to wind turbines due to its reference to habitable structures less than 800 sq. ft.. Need to clarify.)
- c. 60 days is fairly short for review of a commercial scale wind turbine. This might need to be changed to the 180 – 360 day range.
  - d. Options:
    - a. develop a site plan review document for wind turbines (largely a cut and paste of the commercial document) and reference that in the zoning amendment.
    - b. amend the existing commercial site plan document to address wind turbines. (Clarify whether 2007 commercial site plan review document posted on town website is current.)
    - c. could put site plan process directly in zoning bylaw.
  - e. Need to discuss site plan review process with both Planning Board and ZBA.
  - f. Consultants recommended that we review our proposed overlay district sites to ensure that they wouldn't trigger any other discretionary review processes (such as earth removal, wetlands, flood plains). If the sites might trigger discretionary reviews, they recommended removing that site or that part of the overlay parcel.
  - g. Doug will email additional considerations we were unable to get to because of time.
5. Stretch Code: The BBRS will decide January 12 whether or not the "Stretch" energy code can be adopted by the BOS (as we've been told) or whether this will need to go to Town Meeting. Towns have been asked to hold off on adoption. DOER is aware this means towns are at a disadvantage compared to cities in the race to become eligible for the first round of GCA funding.

Respectfully submitted,  
T. Gallagher



## APPENDIX C: Criterion 1 Guidance



### MEMORANDUM

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TO: Recipients of ICF/HW Green Communities Technical Planning Assistance  
FROM: Horsley Witten Group, Inc.  
DATE: January 8, 2010  
RE: Guidance for Meeting Green Communities Act Criterion 1

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The following memorandum is being provided as guidance for meeting Green Communities Act Criterion 1 through the as-of-right siting of research & development (R&D) or manufacturing facilities (these facilities are henceforth referred to as the “target uses”).

#### **Documentation Letter to Department of Energy Resources (DOER):**

In order to meet Criterion 1 through the as-of-right siting of the target uses, the community must provide a letter from municipal counsel certifying that the criterion has been met and summarize the pertinent sections of their zoning bylaw/ordinance. DOER has provided the following sample letter in its guidance materials:

#### Sample Letter:

*The town’s light industrial district, section 4.3 of the zoning bylaw, allows the by-right construction of manufacturing facilities that meet the definitions provided. The text of this section, relevant portions of the town’s site plan review regulations, and the table of uses are attached. Manufacturing of renewable/alternative energy products is clearly allowed, and in fact such a facility was permitted in 2007 and built last year. ABC Industries assembles solar panels from components produced on-site and in other locations around the globe. Finally, the light industrial district covers an area of 250+ acres near a highway interchange. Over 50% of the land in this district is vacant and developable. The district has no stated FAR limit, the impervious surface limit is 70%, buildings can be of up to 3 stories and only one parking space is required per 1000 square feet. Thus, as indicated in the attached calculation, plenty of space exists for 50,000 square feet of floor area to be built.*

This sample letter reaches a level of detail this is appropriate for communities that have ample developable land in which the target uses are allowed. For communities that are closer to their build-out capacity and are looking at development opportunities on a lot-by-lot basis, the letter to DOER may need to cite specific information about parcels or vacant buildings that are eligible for development of the target uses. The recommended

process for documenting that the community has met Criterion 1 is provided in the guidance below.

#### **Municipal Demonstration and Documentation Process:**

In order to meet Criterion 1 through the as-of-right siting of the target uses, the community must demonstrate the following three items:

- Item 1:** The target uses are permitted **as-of-right** in the designated zoning district;
- Item 2:** The target uses are clearly **allowed** based on definitions provided within the zoning bylaw/ordinance; and
- Item 3:** The development of a facility with a minimum 50,000 sq ft. of gross floor area (GFA), or the development of multiple smaller facilities that can cumulatively reach the threshold of 50,000 sq ft. GFA, is **feasible** in the designated zoning district.

#### **Demonstration of Item 1:**

In order to demonstrate that the target uses are permitted as-of-right, the letter to DOER must cite and document the following information, as applicable:

- The specific designated district(s) in which the target uses are allowed;
- All relevant sections of the zoning bylaw/ordinance referencing the target uses such as the use table and any key that will help interpret the use table;
- Any special regulations applicable to the target uses that may restrict the dimensions/density of buildings, such as restrictions on maximum GFA;
- Any potential overlay districts that overlap with the designated zoning district in which the target uses are allowed and may restrict their development or trigger additional permitting processes, such as a water resource protection overlay or a flood plain overlay;
- If special regulations or overlay districts DO EXIST in the designated zoning district, any restrictions and associated regulations should be clearly identified and the letter must provide appropriate documentation demonstrating that the as-of-right development of the target uses is still achievable; and
- Any local regulations applicable to the as-of-right permitting of the target use, such as site plan review.

#### **Demonstration of Item 2:**

In order to demonstrate that the target uses are allowed in the designated zoning district, the letter must provide any relevant definitions from the zoning bylaw/ordinance. It is important to note that the community can meet Criterion 1 by allowing ONLY ONE or BOTH of R&D or manufacturing facilities. The critical point within this demonstration process is to illustrate that the activities needed for renewable or alternative energy R&D or manufacturing facilities are not limited by the definitions provided within the zoning bylaw/ordinance. If the municipality allows R&D or manufacturing facilities and DOES



NOT have an applicable zoning definition, this is understood to mean the municipality allows EVERY type of R&D or manufacturing use, including facilities related to renewable or alternative energy. Additionally, the municipality may provide a general definition for R&D or manufacturing, such as the definitions provided by DOER here:

*Research and Development Facilities: are those used primarily for research, development and/or testing of innovative information, concepts, methods, processes, materials, or products. This can include the design, development, and testing of biological, chemical, electrical, magnetic, mechanical, and/or optical components in advance of product manufacturing. The accessory development, fabrication, and light manufacturing of prototypes, or specialized machinery and devices integral to research or testing may be associated with these uses.*

*Manufacturing Facilities: are those used primarily for heavy or light industry or the manufacture or assembly of a product including processing, blending, fabrication, assembly, treatment and packaging*

Or the definitions found within the Zoning Ordinance for Newburyport, MA here:

*Research and Development: Establishment devoted to research and development activities.*

*Manufacturing: Facilities engaged in the mechanical or chemical transformation of materials or substances into new products including the assembly of component parts, the fabrication of products, or treatment of articles or merchandise and the blending of materials.*

All of the above general definitions are also understood to mean the municipality allows every type of R&D or manufacturing use, including facilities related to renewable or alternative energy. The risk associated with providing a general definition is that the community may end up allowing undesired types of R&D or manufacturing facilities. When drafting new definitions or revising existing definitions relative to meeting the Green Communities Act, the municipality must be careful that its definitions do not restrict certain activities that may be needed for renewable or alternative energy R&D or manufacturing facilities. If a municipality has an existing definition that is potentially restrictive (i.e.: does not allow for chemical manufacturing or R&D for biotechnology), or if a municipality simply wishes to provide further clarity to its definitions, it may wish to consider adding the following sentence to its use definitions:

*This use shall specifically include activities associated with renewable or alternative energy research, services, and products.*

### **Demonstration of Item 3:**

In order to demonstrate that the development of 50,000 sq ft. of floor space for the target uses is feasible in the designated districts, the municipality must perform a yield calculation. As discussed earlier, the type of yield calculation performed and the level of detail it needs to reach will be dependent on the amount of developable land or vacant

buildings that are available within the designated districts. While the guidelines for Criterion 1 only request information regarding zoning regulations, DOER's guidance also states that the locations designated for the as-of-right siting must be "feasible and practical". This means that it may be necessary to also review non-zoning restrictions on development such as wetlands and conservation easements to ensure that no other restrictions or local permitting processes can potentially hinder the development of the target uses. The recommended steps for performing a yield calculation are divided into two categories:

- Yield calculations for the redevelopment of vacant or underutilized buildings; and
- Yield calculations for new development on undeveloped or vacant sites.

The use of vacant buildings is preferred by DOER over siting facilities on undeveloped lots so identifying development opportunities in pre-existing buildings should be the municipality's first step when calculating yield.

Calculating yield for vacant or underutilized buildings:

1. **Identify the development opportunities.** Identify all vacant or underutilized buildings within the designated districts.
2. **Cross-check applicable regulations.** Identify all zoning bylaw/ordinance requirements that may impact or restrict the development potential of vacant structures within the designated districts. Potential sections of zoning to review include:
  - Nonconforming Structures
    - Do any of the vacant buildings identified qualify as nonconforming?
    - What are the permit requirements for changing use?
    - What are the permit requirements for expanding/altering structure?
    - What are the permit requirements for lot improvements?
    - Is there a time limit in which abandoned/unused structures can still be protected under nonconformance regulations?
  - Design Overlay District or Historic District
    - Does the overlay district overlap with any identified buildings/lots?
    - What are the use regulations/restrictions?
    - What are the permit triggers and requirements?
  - Parking Requirements
    - Will new parking spaces be needed?
  - Landscaping Requirements
    - Will landscaping improvements be needed?
  - Stormwater Regulations (may be outside of zoning)
    - Will stormwater improvements be needed?
  - Demolition Regulations (may be outside of zoning bylaw/ordinance)
    - Will demolition be needed for structures on the site?
    - What are the permit triggers and requirements?

- Wetlands Bylaw (outside of zoning bylaw/ordinance)
    - Wetlands/wetland buffers on site?
    - How does this impact the potential permitting process?
3. **Calculate the developable GFA.** Calculate the total amount of useable floor space that is available within the identified vacant or underutilized buildings that IS NOT restricted by zoning regulations or subject to a special permit or any other discretionary permit.
  4. **Documentation to DOER.** List the specific vacant or underutilized buildings that surpass the 50,000 sq ft. GFA threshold and are eligible for the as-of-right siting of the target uses. If no single building is eligible, list all vacant or underutilized buildings and calculate if the cumulative usable floor space will surpass the 50,000 sq ft. GFA threshold. In the letter to DOER, provide a listing of all eligible buildings, document their status as vacant or underutilized, show the calculations demonstrating that the 50,000 sq ft threshold can be met, and document all applicable zoning regulations.

Calculating yield for undeveloped or vacant lots:

1. **Identify the development opportunities.** Identify all undeveloped or vacant lots within the designated districts that are available for development.
2. **Cross-check applicable regulations.** Identify all zoning bylaw/ordinance requirements that may impact the development potential of undeveloped or vacant lots within the designated district. Potential sections of zoning to review include:
  - Dimensional Requirements
    - Minimum lot area.
    - Minimum street frontage.
    - Maximum percentage lot coverage.
    - Maximum percentage building coverage.
    - Minimum floor area ratio.
    - Maximum height.
    - Minimum setbacks.
    - Waiver process for dimensional requirements.
  - Parking Requirements
    - Parking ratios/requirements for target uses.
    - Parking stall requirements.
    - Parking landscaping requirements.
    - Is there potential to reduce parking through off-site or shared parking arrangements if necessary?
  - Water Resource Protection Overlay District (also can be Aquifer Protection Overlay District)
    - Does overlay district overlap with any lots designated district?
    - What are the use regulations/restrictions?
    - What are the permit triggers and requirements?

- Flood Plain Overlay District
    - Does overlay district overlap with any lots designated district?
    - What are the use regulations/restrictions?
    - What are the permit triggers and requirements?
  - Design Overlay District or Historic District
    - Does the overlay district overlap with any lots in designated district?
    - What are the use regulations/restrictions?
    - What are the permit triggers and requirements?
  - Landscaping Requirements
    - Minimum landscaping requirements (if applicable)
  - Buffer to Residential Districts
    - Proximity of lots in designated district to residential districts.
    - Is there an increased buffer distance?
  - Earth Removal Bylaw (may be outside of zoning bylaw/ordinance)
    - What are applicability thresholds?
    - What are permit triggers and requirements?
  - Stormwater Regulations (may be outside of zoning)
    - Permit triggers and requirements?
  - Wetlands Bylaw (outside of zoning bylaw/ordinance)
    - Wetlands/wetland buffers on site?
    - What are permit triggers and requirements?
  - Local Septic System Regulations (outside of zoning bylaw/ordinance)
    - Will septic system be necessary on site?
    - Permit triggers and requirements.
  - Regulations regarding conservation/other easements.
    - Are there any easements in the designated district that restrict development potential?
3. **Calculate the developable acreage.** Calculate the total amount of developable acreage that is available in the district that IS NOT restricted by zoning regulations or subject to a special permit or any other discretionary permit.
4. **Documentation to DOER.** If the total amount of developable acreage clearly surpasses the threshold that would be needed to construct a 50,000 sq ft. building (after accounting for parking lot, access roads, and infrastructure), then the letter to DOER should simply provide the appropriate documentation of such with reference to all applicable zoning regulations. If there are only a limited number of developable lots, or if there are no individual or contiguous lots in the designated district that are large enough to support a building 50,000 sq ft., then the municipality must provide calculations on a lot-by-lot basis. To do so, the municipality must first identify the specific lots that are eligible and calculate the maximum GFA that is achievable on each lot (after accommodating for parking lot, access roads, and infrastructure). In these cases, the letter to DOER should provide documentation of the specific developable lot(s) that are eligible, show the calculations for the GFA on each lot, demonstrate that the 50,000 sq ft threshold can be met, and document all applicable zoning regulations.