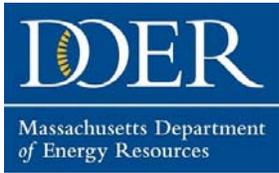




**GREEN COMMUNITIES  
GRANT PROGRAM  
FY 10 APPLICATION**



# DESIGNATION FORM

**INSTRUCTIONS**

In order to be designated as a Green Community pursuant to MGL c 25A §10, the applicant must meet five criteria. The Green Communities Division is required to verify that the applicant has met the criteria through an application process.

This designation form is the first step in a municipality becoming a Green Community. Please fill out this designation form completely including providing the required information outlined in this form. The designation phase is a rolling process. However, to be considered for grants in FY 2010, designation forms are due on **Friday, May 14, 2010 by 5pm**. One electronic copy must be submitted to Cliff Sullivan at [cliff.sullivan@state.ma.us](mailto:cliff.sullivan@state.ma.us) and one unbound hard copy must be submitted to the following address:

Department of Energy Resources  
Green Communities Division  
100 Cambridge Street, 10<sup>th</sup> Floor  
Boston, MA 02114  
ATTN: Cliff Sullivan

Once an applicant has completed this designation form, it will be reviewed by the Green Communities Division and a determination will be made as to designation. When an applicant is designated as a Green Community, it is eligible to apply for grant funds to support energy efficiency and renewable energy projects.

**APPLICANT INFORMATION**

|                                 |       |          |                                   |                          |
|---------------------------------|-------|----------|-----------------------------------|--------------------------|
| Municipality / Local Government |       |          | Contact (print)                   |                          |
| City of Northampton             |       |          | Chris Mason                       |                          |
| Street Address                  |       |          | Title                             |                          |
| 240 Main St.                    |       |          | Energy and Sustainability Officer |                          |
| City/Town                       | State | Zip Code | Telephone                         | Email                    |
| Northampton                     | MA    | 01060    | 413-587-1055                      | cmason@northamptonma.gov |

# CRITERIA 1: AS OF RIGHT SITING

## Description of Criteria

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.

## Type of As-of-Right Zoning

Please indicate which type of as-of-right zoning the municipality is providing (**check all applicable boxes**).

- RE/AE Facilities
- Research and Development
- Manufacturing

## Documentation

### RE/AE Facilities – Description

RE/AE Research and Development and RE/AE Manufacturing (or any other kind of R&D and manufacturing) are allowed by-right in any Special Industrial or General Industrial Zoning District. (Zoning §350-2.1, Definition and Zoning §350-Attachment 1, Table of Use Regulations)

Site Plan approval is required for any construction over 2,000 square feet. Site Plan approval for alternative energy Research and Development and/or manufacturing is guaranteed within one year. (Zoning §350-11.4, Requirements)

Site Plan approval is governed by Massachusetts common law, which has been very clear that site plan approval is NOT a discretionary approval and is only based on HOW projects are developed, NOT on whether or not they are developed.

**See attached City Solicitor's letter on next page**

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CITY OF NORTHAMPTON, MASSACHUSETTS  
OFFICE OF THE CITY SOLICITOR

Elaine M. Reall, Esq.  
City Solicitor

April 28, 2010

Cliff Sullivan  
Department of Energy Resources  
Green Communities Division  
100 Cambridge Street, 10<sup>th</sup> Floor  
Boston, MA 02114

RE: MGL C. 25A, Section 10  
Criteria 1: As-of-Right Siting RE/AE AND Criteria 2: Expedited Permitting

Dear Mr. Sullivan:

It is my opinion, as Northampton City Solicitor, that Northampton complies with the above referenced criteria, as detailed in the Massachusetts Department of Energy Resource's Guidelines for Qualifying (pursuant to MGL Chapter 25A, § 10 Communities Act.

Under Northampton's zoning

1. Renewable Energy/Alternative Energy (RE/AE) Research and Development and RE/AE Manufacturing (or any other kind of R&D and manufacturing) are allowed by-right in any Special Industrial or General Industrial Zoning District. (Zoning §350-2.1, Definition and Zoning §350-Attachment 1, Table of Use Regulations)
2. Site Plan approval is required for any construction over 2,000 square feet, but would not be required for conversion of existing space to RE/AE R&D or Manufacturing. For new construction, the Site Plan approval for alternative energy Research and Development and/or manufacturing is guaranteed within one year. (Zoning §350-11.4, Requirements)

Yield Calculations

The Northampton Office of Planning and Development has done yield calculations for potential RE/AE Research and Development and Manufacturing uses. They report:

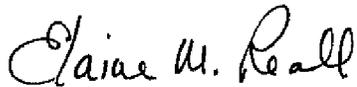
1. There are 588 acres zoned Special Industrial or General Industrial, of which approximately 400 acres is useable for RE/AE R&D and Manufacturing.
2. Approximately 60 acres is available on Greenfield or empty sites for RE/AE R&D and Manufacturing and the remainder is available by redevelopment of existing sites, expansions of existing buildings and reuse of existing buildings.

**As such, it is my opinion, as Northampton City Solicitor, that Northampton complies with MGL Chapter 25A, § Section 10 criteria 1 and 2:**

- 1. Criteria 1 (As-of-Right Siting – Renewable/Alternative Energy) is satisfied because RE/AE Research and Development and RE/AE Manufacturing are allowed by-right in sufficient areas that some of those areas are available to the market.**
- 2. Criteria 2 (Expedited Permitting) is satisfied because the zoning guarantees site plan approval review for these uses within one year. There is nothing in Northampton's rules and regulations that would preclude the issuance of a permitting decision within one year.**

Please feel free to contact me or Wayne Feiden, FAICP, Director of Planning and Development (413-587-1265 or [WFeiden@NorthamptonMA.gov](mailto:WFeiden@NorthamptonMA.gov)) if you need any further clarification.

Regards,

A handwritten signature in cursive script that reads "Elaine M. Reall".

Elaine Reall  
City Solicitor for City of Northampton

## Applicable Section of Northampton Zoning

### Northampton Zoning-- §350-2.1, Definition {extract}

**MANUFACTURING:** Heavy or light industry, manufacture or assembly of a product, including processing, fabrication, assembly, treatment, packaging, and allowed accessory uses.

**RESEARCH AND DEVELOPMENT FACILITY:** A facility primarily for scientific or product research, investigation, testing, or experimentation, along with incidental offices, incidental storage, incidental manufacture and sale of products, and incidental employee-only facilities.

### Northampton Zoning--Attachment 1, Table of Use Regulations {extract}

| Principal Use  | Residential |      |     |     |      | Business |      |      |      |    | Medical | Industrial |      | Business Park | Conser-vancy |
|--|-------------|------|-----|-----|------|----------|------|------|------|----|---------|------------|------|---------------|--------------|
|  | RR          | SR   | URA | URB | URC  | CB       | GB   | HB   | NB   | PV | M       | GI         | SI   | BP            | SC           |
| <b>Utilities, Telecommunications, Municipal Facilities (cont'd)</b>  |             |      |     |     |      |          |      |      |      |    |         |            |      |               |              |
| Small-scale hydroelectric generation   | PB          | PB   | PB  | PB  | PB   | PB       | PB   | PB   | PB   | No | No      | PB         | PB   | PB            | PB           |
| Telecommunications facilities (in accordance with §§ 350-2.1 and 350-10.9)   | PB          | PB   | No  | No  | PB   | PB       | PB   | PB   | PB   | No | PB      | PB         | PB   | PB            | No           |
| Telecommunication antennas which are located on existing telecommunications towers or other structures which do not require the construction of a new tower (in accordance with § 350-10.9)                    | Site        | Site | No  | No  | Site | Site     | Site | Site | Site | No | Site    | Site       | Site | Site          | No           |
| <b>Wholesale Transportation and Industrial Uses</b>  |             |      |     |     |      |          |      |      |      |    |         |            |      |               |              |
| Airport, including aircraft sales  | No          | No   | No  | No  | No   | No       | No   | No   | No   | No | No      | No         | No   | No            | PB           |
| Heliport   | No          | No   | No  | No  | No   | PB       | PB   | PB   | No   | No | No      | PB         | PB   | No            | PB           |
| Bus passenger terminal and taxi facilities   | No          | No   | No  | No  | No   | A        | A    | A    | No   | No | No      | No         | PB   | No            | No           |
| Construction supply establishments   | No          | No   | No  | No  | No   | No       | No   | A    | No   | No | No      | PB         | PB   | No            | No           |
| Contractor's yard, open storage of raw materials, finished goods, or construction equipment and structures for storing such equipment, provided that outside storage areas shall be screened from outside view | No          | No   | No  | No  | No   | No       | No   | PB   | No   | No | No      | PB         | PB   | No            | No           |
| Commercial motor vehicle maintenance, garaging and parking facilities (Outside parking shall be screened from the public view.)  | No          | No   | No  | No  | No   | No       | No   | No   | No   | No | No      | A          | PB   | No            | No           |
| Manufacturing  | No          | No   | No  | No  | No   | No       | No   | PB   | No   | No | No      | A          | A    | No            | No           |
| <b>Wholesale Trade and Distribution (cont'd)</b>   |             |      |     |     |      |          |      |      |      |    |         |            |      |               |              |
| Research and development facilities  | No          | No   | No  | No  | No   | PB       | PB   | PB   | PB   | No | No      | A          | A    | PB            | No           |
| Wholesale bakery, wholesale laundry, or dry-cleaning plant   | No          | No   | No  | No  | No   | No       | PB   | A    | No   | No | No      | A          | A    | No            | No           |
| Wholesale trade and distribution   | No          | No   | No  | No  | No   | No       | A    | A    | No   | No | No      | A          | A    | No            | No           |

**NOTES:**

<sup>1</sup> Allowed by right (A) in a building in existence on January 1, 1997.

<sup>2</sup> Allowed with a special permit (PB) in a building in existence on January 1, 1997.

**Key to Symbols**

A Allowed by-right. All uses must be registered with the Building Commissioner and comply with all codes. (Site Plan Approval is often also required for uses above certain thresholds)

PB Allowed by Special Permit from Planning Board

ZBA Allowed by Special Permit from Zoning Board of Appeals

CC Allowed by Special Permit from City Council

Site Allowed with Site Plan Approval from Planning Board

No Not allowed

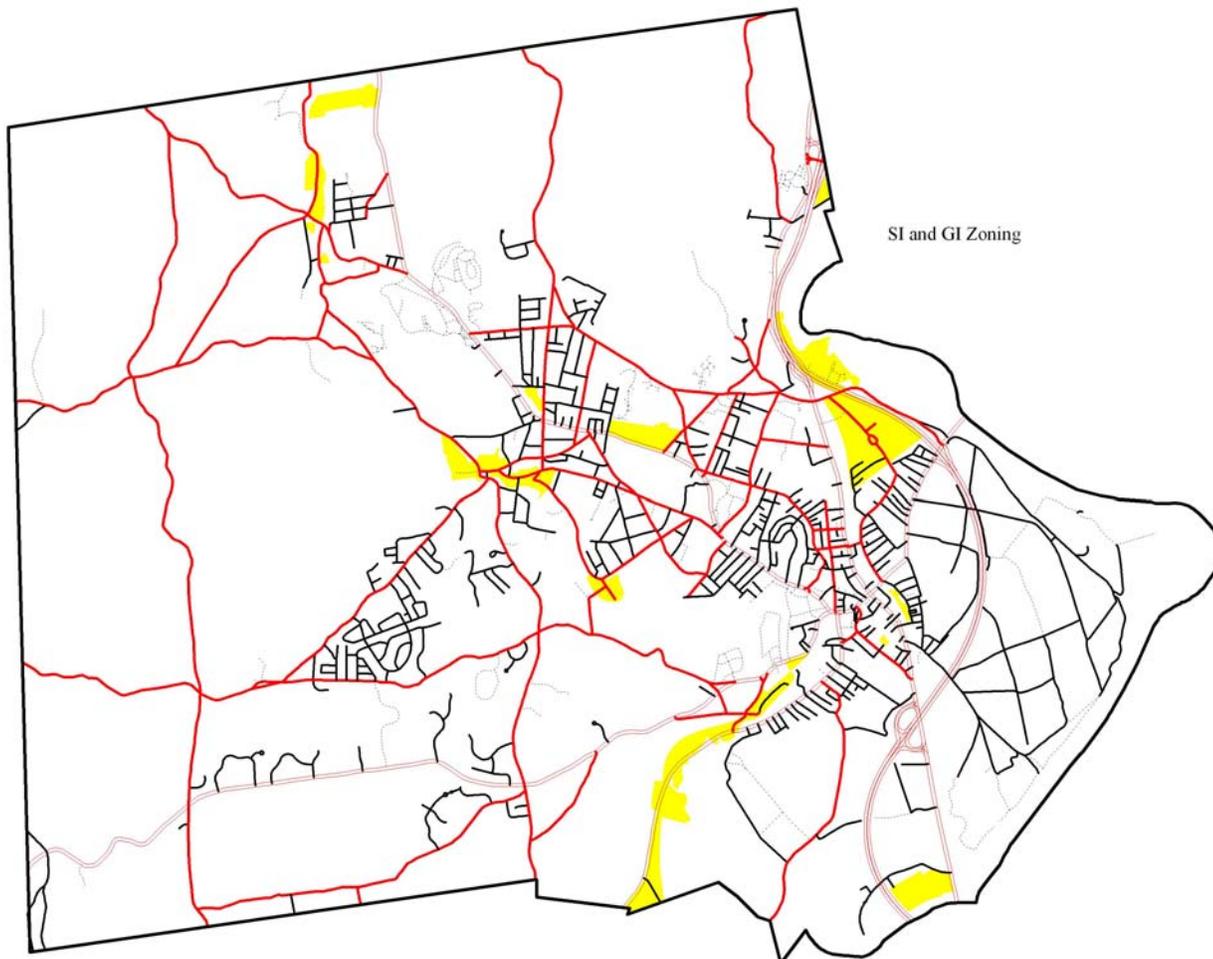
### Northampton Zoning—§350-11.4, Site Plan Requirements {Extract}

*These requirements are superimposed over any other requirements of this Zoning Ordinance. The Building Commissioner may not issue any building or zoning permits for any intermediate or major projects until the site plan has been approved by the Planning Board through a simple majority vote of the members present. The site plan process shall be conducted by the Planning Board in conformance with the filing, review and public hearing requirements for a special permit, except in the case of alternative energy research and development (R&D) and manufacturing facilities, as defined in the Green Communities Act. **Editor's Note: See Acts of 2008, Ch. 169.***

*For alternative energy R&D and/or manufacturing, review periods are guaranteed not to exceed one year from the date of initial application to the date of final Board action. Said applications shall be reviewed within 45 days, and the applicants will be notified of what additional submissions are necessary to meet this one-year final action deadline. The Planning Board shall use the criteria of § [350-11.6](#) for approving or disapproving the site plan. As with special permits,*

any appeal of a site plan decision by the Planning Board shall be made in accordance with MGL c. 40A, § 17.

### **Northampton Zoning Map Highlighting SI and GI Zoning— RE/AE R&D and Manufacturing allowed by right**



### **Lot Yield Calculations**

The Northampton Office of Planning and Development has done an analysis of General and Special Industrial zoning districts in Northampton. We concluded:

3. These districts contain greenfield sites, partially developed sites, and previously developed sites that are suitable to house significant RE/AE Research and Development and manufacturing.
4. There are 588 acres zoned Special Industrial or General Industrial in the city, of which approximately 400 acres is useable for RE/AE R&D and Manufacturing.
5. Approximately 60 acres is available on greenfield or empty sites for RE/AE R&D and Manufacturing, especially in GI sites on Haydenville Road and off Damon Road.
6. The remaining 340 acres provides ample opportunity for the redevelopment of existing sites, expansions of existing buildings and reuse of existing buildings.

## **CRITERIA 2: EXPEDITED PERMITTING**

### **Description of Criteria**

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 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.

### **Type of Expedited Permitting**

Please indicate which type of as-of-right zoning the municipality is providing (**check the applicable box**).



Local Expedited Permitting Process

### **Documentation**

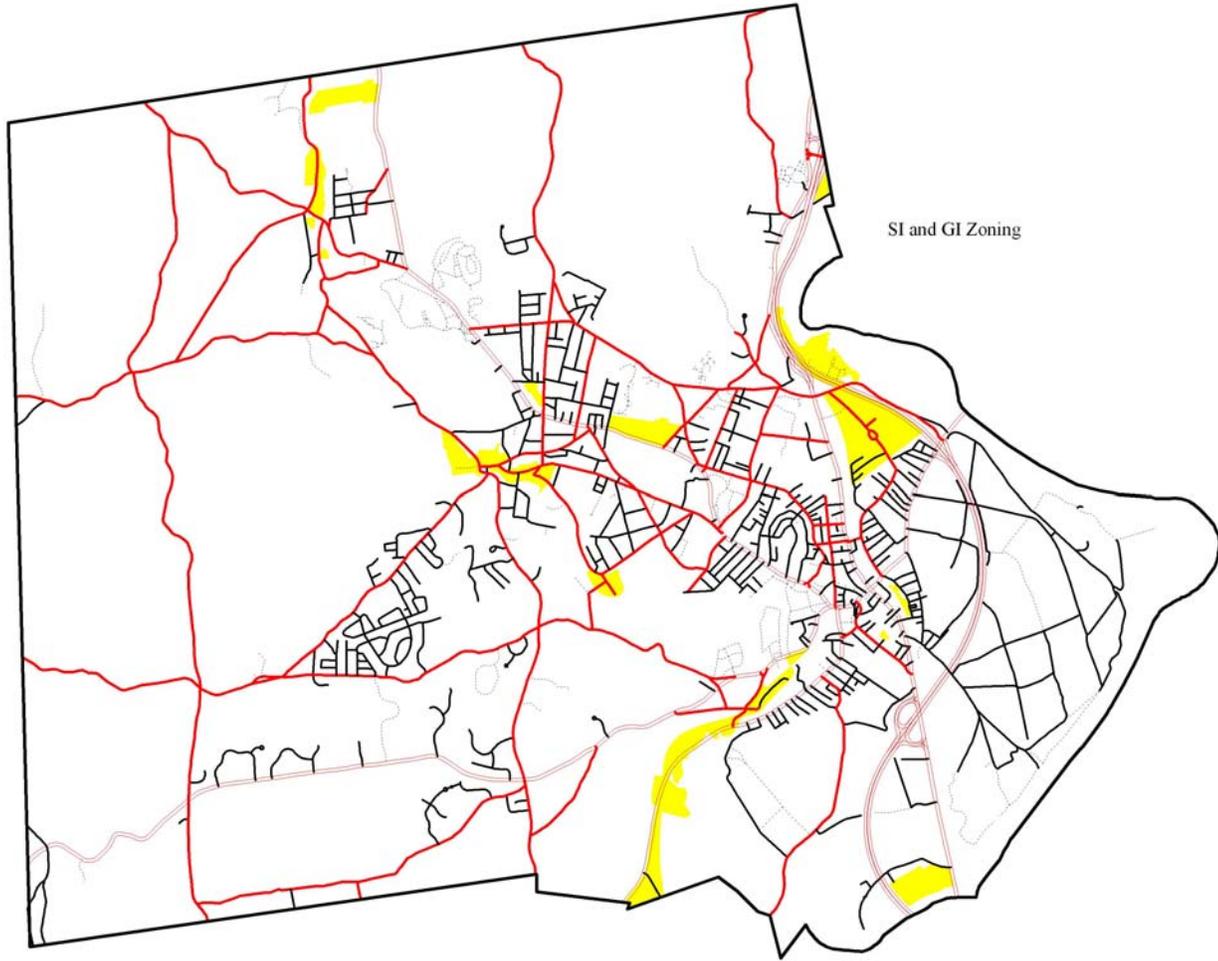
**See attached City Solicitor's letter under Criteria 1.**

**As documented in the City Solicitor's letter and the zoning and yield calculation criteria in Criteria 1, under zoning permits for energy facilities are as-of-right and must be issued within an expedited time frame.**

**There is nothing within the State Wetlands Protection Act and regulations nor the Northampton Wetlands Protection Ordinance that would limit the Conservation Commission from issuing their permits within the same time period as the Planning Board, which has been their practice for decades. Nonetheless, for the purpose of the lot yield assessment under the Criteria 1 section (above) we assume for lot yield only that land that does not need any Wetlands Orders of Condition to demonstrate that Criteria 2 is met regardless of how long the Conservation Commission takes.**

**No other discretionary permits are required and non-discretionary permits (primarily building permit and related codes) are all issued on a state-mandated timeline.**

**Northampton Zoning Map Highlighting SI and GI Zoning—  
Expedited Permitting coincides with RE/AE R&D and Manufacturing allowed by right**



# CRITERIA 3: ENERGY USE BASELINE / REDUCTION PLAN

## Description of Criteria

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.

## Documentation

Please provide a copy of the energy use baseline inventory completed for all municipally owned and operated buildings, vehicles, street lights and traffic lights and a detailed plan for reducing fossil fuel consumption by 20% in 5 years (**all required**).

Identify inventory tool used: Facility's monthly energy consumption is entered into a series of Excel spreadsheets. See sample spreadsheet below. Vehicle fuel is tracked using the Gasboy petroleum dispensing system.

Provide the baseline year used: Fiscal Year 2009

Provide documentation of results of inventory

Copy of plan / specific Actions to be implemented and timeline with milestones to achieve required energy reductions

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## Inserted on the following pages are:

- **Sample Excel spreadsheets used by Northampton for tracking energy use**
- **FY09 inventory of facilities energy use**
- **FY09 inventory of vehicle fuels used**
- **Northampton Energy Reduction Plan**
- **City Council Resolution adopting the Northampton Energy Reduction Plan**
- **Minutes from Northampton School Committee verifying committee resolution of approval of the Northampton Energy Reduction Plan**
- **Letter of confirmation that the Smith Vocational and Agricultural High School Board of Trustees approved the Northampton Energy Reduction Plan**

Until recently, data on all types of facility energy use was taken from received invoices (bills) and was entered into Excel spreadsheets. Over the last two years, data on electric and natural gas consumption has been taken either from received invoices or from the National Grid and Bay State Gas web sites. Data on oil and propane consumption are still taken from received invoices.

The Gasboy petroleum dispensing system automatically tracks the date, time, pump-key number (assigned to a specific vehicle), and password (assigned to an individual staff person in a specific department) at each fill-up. In some cases, because individuals within a department may have reasons to share vehicles, this does not currently allow the City to track fuel use per vehicle. Odometer readings are not currently tracked at the time of fill-up.

**Sample Excel Spreadsheets**

**Sample Spreadsheet: Natural Gas  
Sample Building: Municipal Building**

| Supplier Account # |              | 308232002J45065 |             | Customer Name: |            | Municipal Building |            |
|--------------------|--------------|-----------------|-------------|----------------|------------|--------------------|------------|
| Baystate Account # |              | 3082320026      |             | Meter #:       |            | J45065             |            |
|                    |              | Read Date       | Therms Used | \$/Therm       | SUPPLY \$  | Delivery \$        | TOTAL \$   |
| FY - 2010          | June-10      | 6/12/2010       | 0           | \$1.28         | \$0.00     |                    | \$0.00     |
|                    | May-10       | 5/13/2010       | 0           | \$1.28         | \$0.00     | \$0.00             | \$0.00     |
|                    | April-10     | 4/13/2010       | 0           | \$1.28         | \$0.00     | \$0.00             | \$0.00     |
|                    | March-10     | 3/14/2010       | 1157        | \$1.28         | \$1,480.96 | \$365.64           | \$1,846.60 |
|                    | February-10  | 2/12/2010       | 1350        | \$1.28         | \$1,728.00 | \$413.80           | \$2,141.80 |
|                    | January-10   | 1/13/2010       | 1707        | \$1.28         | \$2,184.96 | \$504.44           | \$2,689.40 |
|                    | December-09  | 12/14/2009      | 868         | \$1.28         | \$1,111.04 | \$291.30           | \$1,402.34 |
|                    | November-09  | 11/13/2009      | 728         | \$1.28         | \$931.84   | \$228.38           | \$1,160.22 |
|                    | October-09   | 10/15/2009      | 103         | \$1.28         | \$131.84   | \$108.19           | \$240.03   |
|                    | September-09 | 9/15/2009       | 26          | \$1.28         | \$33.28    | \$93.66            | \$126.94   |
|                    | August-09    | 8/14/2009       | 27          | \$1.28         | \$34.56    | \$94.51            | \$129.07   |
|                    | July-09      | 7/16/2009       | 32          | \$1.28         | \$40.96    | \$96.73            | \$137.69   |
| FY - 2009          | June-09      | 6/15/2009       | 29          | \$1.28         | \$37.23    | \$94.20            | \$131.43   |
|                    | May-09       | 5/14/2009       | 262         | \$1.28         | \$336.33   | \$141.37           | \$477.70   |
|                    | April-09     | 4/14/2009       | 733         | \$1.28         | \$940.95   | \$250.16           | \$1,191.11 |
|                    | March-09     | 3/16/2009       | 1129        | \$1.28         | \$1,449.30 | \$337.68           | \$1,786.98 |
|                    | February-09  | 2/12/2009       | 1356        | \$1.28         | \$1,740.70 | \$367.00           | \$2,107.70 |
|                    | January-09   | 1/15/2009       | 1649        | \$1.28         | \$2,116.82 | \$414.00           | \$2,530.82 |
|                    | December-08  | 12/12/2008      | 1028        | \$1.28         | \$1,319.64 | \$296.00           | \$1,615.64 |
|                    | November-08  | 11/13/2008      | 566         | \$1.28         | \$726.57   | \$175.00           | \$901.57   |
|                    | October-08   | 10/15/2008      | 135         | \$1.40         | \$189.00   | \$89.49            | \$278.49   |
|                    | September-08 | 9/15/2008       | 191         | \$1.51         | \$288.41   | \$97.72            | \$386.13   |
| August-08          | 8/14/2008    | 170             | \$1.51      | \$256.70       | \$94.98    | \$351.68           |            |
| July-08            | 7/16/2008    | 199             | \$1.43      | \$285.21       | \$99.59    | \$384.80           |            |
| FY - 2008          | June-08      | 6/13/2008       | 201         | \$1.34         | \$269.34   | \$99.89            | \$369.23   |
|                    | May-08       | 5/14/2008       | 273         | \$1.17         | \$320.15   | \$118.49           | \$438.64   |
|                    | April-08     | 4/14/2008       | 857         | \$1.00         | \$855.89   | \$245.77           | \$1,101.66 |
|                    | March-08     | 3/14/2008       | 1061        | \$1.01         | \$1,076.07 | \$287.52           | \$1,363.59 |
|                    | February-08  | 2/14/2008       | 1401        | \$1.02         | \$1,431.12 | \$350.00           | \$1,781.12 |
|                    | January-08   | 1/16/2008       | 1546        | \$1.00         | \$1,550.17 | \$380.66           | \$1,930.83 |
|                    | December-07  | 12/17/2007      | 1128        | \$0.95         | \$1,069.57 | \$301.21           | \$1,370.78 |
|                    | November-07  | 11/17/2007      | 553         | \$1.10         | \$609.63   | \$171.66           | \$781.29   |
|                    | October-07   | 10/18/2007      | 223         | \$1.29         | \$288.56   | \$99.84            | \$388.40   |
|                    | September-07 | 9/18/2007       | 185         | \$1.29         | \$239.39   | \$94.26            | \$333.65   |
|                    | August-07    | 8/19/2007       | 189         | \$1.29         | \$244.57   | \$94.85            | \$339.42   |
| July-07            | 7/20/2007    | 202             | \$1.29      | \$261.39       | \$99.75    | \$361.14           |            |

Section of Typical Spreadsheet for Oil or Propane

**FY09**

| OIL USAGE | SCHOOLS             |        |                |          | FIRE STATION          |          |
|-----------|---------------------|--------|----------------|----------|-----------------------|----------|
|           | Feiker School       |        | Florence C. C. |          | Florence Fire Station |          |
|           | 221 Riverside Drive |        | 140 Pine St.   |          | 69 North Maple St.    |          |
|           | Fill Date           | Amount | Fill Date      | Amount   | Fill Date             | Amount   |
| MISC.     |                     |        | 5/30/2009      | 8.5      |                       |          |
|           | 6/19/2009           | 11     | 5/9/2009       | 13.1     |                       |          |
|           | 5/30/2009           | 32.1   | 4/25/2009      | 276.5    | 6/1/2009              | 163.4    |
|           | 5/9/2009            | 123.9  | 4/11/2009      | 266.6    | 5/1/2009              | 413.3    |
|           | 4/11/2009           | 144.3  | 4/4/2009       | 193.7    | 4/1/2009              | 702      |
| MARCH     |                     |        |                |          |                       |          |
|           |                     |        | 3/28/2009      | 285.3    |                       |          |
|           | 3/28/2009           | 190.4  | 3/21/2009      | 236.2    |                       |          |
|           | 3/14/2009           | 257.5  | 3/14/2009      | 361.3    | 3/1/2009              | 825.4    |
| FEBURARY  |                     |        | 3/7/2009       | 527.1    |                       |          |
|           |                     |        | 2/21/2009      | 531.9    |                       |          |
|           |                     |        | 2/14/2009      | 467.1    |                       |          |
|           | 2/28/2009           | 291.6  | 2/7/2009       | 214.3    |                       |          |
|           | 2/14/2009           | 322.3  | 2/5/2009       | 365.8    | 2/1/2009              | 1,218.40 |
| JANUARY   |                     |        | 1/31/2009      | 672.5    |                       |          |
|           | 1/31/2009           | 185.1  | 1/24/2009      | 671.2    |                       |          |
|           | 1/24/2009           | 305.3  | 1/17/2009      | 758.9    |                       |          |
|           | 1/13/2009           | 288.4  | 1/10/2009      | 685.2    |                       |          |
|           | 1/2/2009            | 323.6  | 1/2/2009       | 360.2    | 1/1/2009              | 866.4    |
| DECEMBER  |                     |        |                |          |                       |          |
|           |                     |        | 12/29/2008     | 872.8    |                       |          |
|           |                     |        | 12/20/2008     | 403.6    |                       |          |
|           | 12/20/2008          | 201.6  | 12/16/2008     | 436.1    |                       |          |
|           | 12/11/2008          | 478.4  | 12/10/2008     | 1,023.00 | 12/1/2008             | 652      |
| NOVEMBER  |                     |        |                |          |                       |          |
|           |                     |        | 11/28/2008     | 824.1    |                       |          |
|           |                     |        | 11/18/2008     | 455      |                       |          |
|           | 11/19/2008          | 521    | 11/6/2008      | 799      |                       |          |
| OCTOBER   |                     |        |                |          |                       |          |
|           |                     |        |                |          |                       |          |
|           |                     |        |                |          |                       |          |
|           |                     |        |                |          |                       |          |
| SEPTEMBER |                     |        |                |          |                       |          |
|           |                     |        |                |          |                       |          |
|           |                     |        |                |          | 9/1/2008              | 318.5    |
| MISC.     |                     |        |                |          |                       |          |
|           | 8/21/2008           | 179.9  | 8/21/2008      | 46.5     |                       |          |

## Sample Spreadsheet: Electricity

| Location: Muni Bldg. |             | Utilities Breakdown Electricity |             |             |             |             |             |                            |             |             |                        |             |              |
|----------------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|----------------------------|-------------|-------------|------------------------|-------------|--------------|
| FY 2010              |             | Electrical Consumption          |             |             |             |             |             | Account Number: 1350995006 |             |             | Current Supplier: Gexa |             |              |
|                      | July        | August                          | September   | October     | November    | December    | January     | February                   | March       | April       | May                    | June        | Total        |
| Read Date            | 7/7         | 8/5                             | 9/3         | 10/5        | 11/3        | 12/4        | 1/6         | 3/5                        | 2/4         |             |                        |             |              |
| Read Days            | 33          | 29                              | 29          | 32          | 29          | 31          | 33          | 29                         | 29          |             |                        |             | 274          |
| Total kWh            | 12,120      | 12,720                          | 13,440      | 11,520      | 10,440      | 10,800      | 10,320      | 9,360                      | 9,480       |             |                        |             | 100,200      |
| Utility Charges      | \$ 1,911.49 | \$ 2,005.70                     | \$ 2,151.81 | \$ 695.50   | \$ 631.19   | \$ 652.81   | \$ 633.08   | \$ 643.70                  | \$ 621.14   |             |                        |             | \$ 9,946.42  |
| Supplier Charges     | \$ -        | \$ -                            | \$ -        | \$ 963.53   | \$ 873.20   | \$ 903.31   | \$ 863.16   | \$ 782.87                  | \$ 792.91   |             |                        |             | \$ 5,178.98  |
| Total Cost           | \$ 1,911.49 | \$ 2,005.70                     | \$ 2,151.81 | \$ 1,659.03 | \$ 1,504.39 | \$ 1,556.12 | \$ 1,496.24 | \$ 1,426.57                | \$ 1,414.05 | \$ -        | \$ -                   | \$ -        | \$ 15,125.40 |
| FY 2009              |             | Electrical Consumption          |             |             |             |             |             | Account Number: 1350995006 |             |             | Supplier: NationalGrid |             |              |
|                      | July        | August                          | September   | October     | November    | December    | January     | February                   | March       | April       | May                    | June        | Total        |
| Read Date            | 7/1         | 8/4                             | 9/4         | 10/2        | 11/3        | 12/4        | 1/6         | 2/4                        | 3/5         | 4/6         | 5/6                    | 6/4         |              |
| Read Days            | 28          | 34                              | 31          | 28          | 32          | 31          | 33          | 29                         | 29          | 32          | 30                     | 29          | 366          |
| Total kWh            | 10,800      | 15,000                          | 12,000      | 9,600       | 8,760       | 8,640       | 10,440      | 10,560                     | 10,320      | 10,680      | 10,080                 | 9,960       | 126,840      |
| Utility Charges      | \$ 615.65   | \$ 851.60                       | \$ 683.06   | \$ 551.69   | \$ 545.20   | \$ 537.83   | \$ 648.03   | \$ 655.39                  | \$ 615.06   | \$ 636.53   | \$ 600.77              | \$ 593.62   | \$ 7,534.42  |
| Supplier Charges     | \$ 1,249.34 | \$ 1,735.20                     | \$ 1,388.16 | \$ 1,110.52 | \$ 1,020.45 | \$ 1,074.04 | \$ 1,297.79 | \$ 1,312.72                | \$ 1,305.69 | \$ 1,336.97 | \$ 1,208.00            | \$ 978.85   | \$ 15,017.74 |
| Total Cost           | \$ 1,864.99 | \$ 2,586.80                     | \$ 2,071.22 | \$ 1,662.21 | \$ 1,565.65 | \$ 1,611.87 | \$ 1,945.82 | \$ 1,968.11                | \$ 1,920.75 | \$ 1,973.50 | \$ 1,808.77            | \$ 1,572.47 | \$ 22,552.16 |
| FY 2008              |             | Electrical Consumption          |             |             |             |             |             | Account Number: 1350995006 |             |             | Supplier: NationalGrid |             |              |
|                      | July        | August                          | September   | October     | November    | December    | January     | February                   | March       | April       | May                    | June        | Total        |
| Read Date            | 7/1         | 8/4                             | 9/4         | 10/2        | 11/3        | 12/4        | 1/6         | 2/4                        | 3/5         | 4/3         | 5/2                    | 6/3         |              |
| Read Days            | 29          | 30                              | 29          | 32          | 0           | 34          | 31          | 32                         | 29          | 29          | 29                     | 32          | 336          |
| Total kWh            | 11,880      | 1,392                           | 13,080      | 11,640      | 9,480       | 10,068      | 9,840       | 10,440                     | 9,240       | 9,120       | 8,520                  | 9,480       | 114,180      |
| Utility Charges      | \$ 702.53   | \$ 821.72                       | \$ 772.57   | \$ 698.32   | \$ 572.18   | \$ 632.30   | \$ 592.88   | \$ 618.34                  | \$ 544.77   | \$ 521.26   | \$ 487.54              | \$ 541.50   | \$ 7,505.91  |
| Supplier Charges     | \$ 1,222.10 | \$ 1,431.90                     | \$ 1,345.58 | \$ 1,197.41 | \$ 975.21   | \$ 1,137.58 | \$ 1,048.06 | \$ 1,111.97                | \$ 984.15   | \$ 971.37   | \$ 912.85              | \$ 1,096.65 | \$ 13,434.83 |
| Total Cost           | \$ 1,924.63 | \$ 2,253.62                     | \$ 2,118.15 | \$ 1,895.73 | \$ 1,547.39 | \$ 1,769.88 | \$ 1,640.94 | \$ 1,730.31                | \$ 1,528.92 | \$ 1,492.63 | \$ 1,400.39            | \$ 1,638.15 | \$ 20,940.74 |

**Fiscal Year 2009 Energy Use Inventory Summary for Municipal Buildings, Street and Traffic Lighting**

|  | Electricity       |               | Natural Gas    |               | Fuel Oil      |               | Propane       |              | Total<br>MMBTU |
|--|-------------------|---------------|----------------|---------------|---------------|---------------|---------------|--------------|----------------|
|  | kWh               | MMBTU         | therms         | MMBTU         | Gal.          | MMBTU         | Gal.          | MMBTU        |                |
| City Hall  | 94,800            | 323           |                |               | 3,774         | 525           |               |              | 848            |
| Memorial Hall  | 50,320            | 172           |                |               | 7,017         | 975           |               |              | 1,147          |
| Municipal Building                                   | 126,840           | 433           | 7,447          | 744.7         |               |               |               |              | 1,177          |
| Senior Center  | 218,280           | 745           | 1,264          | 126.4         |               |               |               |              | 871            |
| James House Adult Learning                           | 29,120            | 99            |                |               | 4,313         | 600           |               |              | 699            |
| Academy of Music                                     | 72,360            | 247           |                |               | 8,942         | 1,243         |               |              | 1,490          |
| Main Fire Headquarters                               | 281,440           | 960           | 14,970         | 1497          | 5,159         | 717           |               |              | 3,174          |
| Florence Fire Substation                             | 51,833            | 177           |                |               | 5,161         | 717           |               |              | 894            |
| Police Headquarters                                  | 188,960           | 645           |                |               |               |               |               |              | 645            |
| DPW Administration Bldg.                             | 56,092            | 191           |                |               |               |               |               |              | 191            |
| Water Department Administration                      | 11,281            | 38            | 2,085          | 208.5         |               |               |               |              | 247            |
| DPW Garage   | 155,360           | 530           | 285            | 28.5          | 16,813        | 2,337         |               |              | 2,896          |
| Misc. DPW Campus Energy Use                          | 33,337            | 114           |                |               |               |               |               |              | 114            |
| Waste Water Treatment Plant                          | 2,010,600         | 6,860         |                |               | 5,985         | 832           | 52,288        | 4758.21      | 12,450         |
| Waste Water Pumping Facilities                       | 59,623            | 203           | 646            | 64.6          |               |               |               |              | 268            |
| Water Treatment Plant                                | 408,300           | 1,393         |                |               |               |               | 32,274        | 2936.93      | 4,330          |
| Water Pumping Facilities                             | 209,895           | 716           | 499            | 49.9          |               |               |               |              | 766            |
| Landfill and Cemeteries                              | 113,556           | 387           | 2,077          | 207.7         | 4,897         | 681           |               |              | 1,276          |
| Bridge Street Elementary                             | 215,280           | 735           | 28,808         | 2880.8        |               |               |               |              | 3,615          |
| Jackson Street Elementary                            | 311,700           | 1,064         | 34,583         | 3458.3        |               |               |               |              | 4,522          |
| Leeds Elementary                                     | 249,240           | 850           | 43,157         | 4315.7        |               |               |               |              | 5,166          |
| Ryan Road Elementary                                 | 184,080           | 628           | 19,970         | 1997          |               |               |               |              | 2,625          |
| JFK Middle School                                    | 859,500           | 2,933         | 79,555         | 7955.5        |               |               |               |              | 10,888         |
| Northampton High School                              | 1,159,000         | 3,955         | 68,333         | 6833.3        |               |               |               |              | 10,788         |
| Smith Vocational and Agricultural HS                 | 1,232,000         | 4,204         | 104,824        | 10482.4       | 7,770         | 1,080         | 2,142         | 194.922      | 15,961         |
| Feiker Pre-School                                    | 21,377            | 73            |                |               | 3,856         | 536           |               |              | 609            |
| Florence Community Center                            | 88,653            | 302           |                |               | 12,281        | 1,707         |               |              | 2,010          |
| Forbes Library                                       | 326,080           | 1,113         |                |               | 9,458         | 1,315         |               |              | 2,427          |
| Lilly Library  | 89,520            | 305           | 5,211          | 521.1         |               |               |               |              | 827            |
| Street Lights (S1, S2, and S3 Accounts)              | 1,173,597         | 4,004         |                |               |               |               |               |              | 4,004          |
| Misc. Outdoor Metered Lighting                       | 58,796            | 201           |                |               |               |               |               |              | 201            |
| Parking Lot Lights (Metered)                         | 336,489           | 1,148         |                |               |               |               |               |              | 1,148          |
| Traffic Lights                                       | 72,186            | 246           |                |               |               |               |               |              | 246            |
| Misc Accounts (comfort stations, field lights, etc.) | 145,631           | 497           |                |               |               |               |               |              | 497            |
| <b>Total</b>   | <b>10,695,126</b> | <b>36,492</b> | <b>413,714</b> | <b>41,371</b> | <b>95,426</b> | <b>13,264</b> | <b>86,704</b> | <b>7,890</b> | <b>99,017</b>  |

**Fiscal Year 2009 Municipal Vehicle Energy Use**

|                        | <b>Unleaded (Gal)</b> | <b>Diesel (Gal)</b> |
|------------------------|-----------------------|---------------------|
| DPW-Streets            | 1,429                 | 22,683              |
| WWTP                   | 2,384                 | 1,416               |
| Sewer                  | 470                   | 7,879               |
| Water Dept.            | 5,441                 | 7,929               |
| DPW-Recreation Crew    | 1,960                 | 3,175               |
| Cemetery               | 1,325                 | 1,737               |
| DPW-Engineering        | 2,533                 | 127                 |
| Police                 | 29,825                | 30                  |
| SVAHS (and SVAHS Farm) | 4,599                 | 2,178               |
| K-12 School            | 3,020                 | 6,171               |
| Council on Aging       | 379                   | -                   |
| Fire Department        | 4,776                 | 16                  |
| Libraries              | 69                    | -                   |
| Central Services       | 2,291                 | -                   |
| Recreation Department  | 257                   | -                   |
| Parking                | 2,419                 | 223                 |
| Bldg. Inspector        | 139                   | -                   |
| Board of Health        | 213                   | -                   |
| Landfill               | 5                     | 5,024               |
| <b>Total Gallons</b>   | <b>63,531</b>         | <b>58,585</b>       |
| <b>Total MMBTU</b>     | <b>7,878</b>          | <b>8,143</b>        |



**City of Northampton**  
**Municipal Energy**  
**Reduction Plan**  
**May 2010**

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## **PURPOSE AND ACKNOWLEDGEMENTS**

The measures spelled out in this energy reduction plan stem from Northampton city staff, commissions, and boards enacting actions called for in the Sustainable Northampton Comprehensive Plan. The Northampton 2010 Energy Reduction Plan consolidates and describes in one document Northampton's efforts to reduce consumption of fossil fuels and reduce greenhouse gas emissions as they stand in the spring of 2010. It describes the work of the Mayor's Office, Central Services, Department of Public Works, Planning Department, Parking Commissioner, Department of Community and Economic Development Office, School Department, Smith Vocational and Agricultural High School, the Northampton Energy and Sustainability Officer, and the Northampton Energy and Sustainability Commission. Multiple individuals from all of these organizations contributed to the development of this document and are instrumental in Northampton's continuing work toward a cleaner more energy efficient City.

## **EXECUTIVE SUMMARY**

This Plan describes specific measures that Northampton's City government will take to reduce municipal energy use by more than 20% in less than five years. Many of the actions specified here are already underway and build on past successes.

Northampton has a long history of prioritizing clean efficient energy use. The City has had an active energy commission and employed an energy officer on and off since the 1980s. Through the years, the City has conducted multiple energy audits and has established a habit of regularly upgrading to higher efficiency energy systems. In 2007, Northampton began to track energy use through the EPA's Portfolio Manager Program. This program revealed many of Northampton's buildings to be eligible for the Energy Star rating; however, Northampton is waiting until the City completes an energy services performance project before submitting to the EPA for this recognition. ConEdison Solutions, an energy services company that just completed an investment grade audit of Northampton's municipal buildings, reported that efficiency improvements had already been completed for many of Northampton's buildings.

The City's efficiency work hasn't stopped with its buildings. In 1992 the City conducted a study of street- and traffic-light use and, based on that study, implemented a street and traffic light energy reduction plan that reduced the City's operating costs for streetlights by 14%. More recently, in 2009, Northampton became the first city in Massachusetts to install high-efficiency LED lamps in a downtown parking lot. This follows Northampton's earlier installation of solar-powered parking pay and display machines for downtown parking areas.

The Northampton Parking Division has for years contracted for downtown trash to be collected by bicycle avoiding hundreds of gallons a year of diesel use. In 2007, The DPW began replacing four-wheel drive vehicles with more efficient two-wheel drive vehicles whenever possible. The DPW has also replaced two utility vehicles with gas-electric hybrids. In 2008, the City launched a landfill gas-to-energy plant that reduces greenhouse gas emissions by more than four times the level of emissions produced by all municipal energy use. The DPW now plans on generating electricity with an in-line hydro-electric plant in the water delivery system.

Recently the City has reduced car miles traveled by expanding to 12 miles of bike paths that connect to another 20 miles in other communities and installing 140 bike parking spaces and 12 bike lockers. The City has a goal to have a multi-use trail within ½ mile of 70% of city residents.

In 2000, Northampton joined the Cities for Climate Protection program run by ICLEI – Local Governments for Sustainability and established, in 2001, a Greenhouse Gas Inventory of

Northampton's municipal, business, industrial, and residential emissions. Northampton will conduct a second inventory in 2011 to track its progress in reducing greenhouse gas emissions. In 2008, Northampton completed a 28-month comprehensive community planning process that resulted in publication of the Sustainable Northampton Comprehensive Plan. Amongst other guiding principals, this Plan lays out a vision to significantly improve energy efficiency, reduce greenhouse gas emissions, and make the City more walkable, bikeable, and transit-oriented. In 2008, Mayor Higgins formally endorsed the Pioneer Valley Clean Energy Plan the first (and possibly only) regional clean energy plan in Massachusetts.

In Northampton, efforts to increase use of clean renewable energy and energy efficiency don't stop with the municipality. Northampton had by far the most number of residents and businesses of any city or town in Massachusetts participate in the Massachusetts Renewable Energy Trust's GreenUp Clean Energy Choice Program. This participation by its citizens resulted in \$254,000 in grant funds coming to Northampton for municipal clean energy projects. This and other grant funds have enabled Northampton to install 23 kW of photovoltaic panels on two City buildings and more is planned.

Northampton's City government is also committed to helping private residents and businesses increase efficiency and reduce greenhouse gas emissions. City staff are in communication with local lenders to make sure energy efficient mortgages are readily available in Northampton. The City's Community and Economic Development Director and Energy and Sustainability Officer are working with the Northampton Chamber of Commerce on a Green Business Initiative and the City has for years formally recognized local businesses for their green initiatives. Most recently, the City has partnered with regional planning agencies, not-for-profit groups, and local businesses to lobby Massachusetts legislators to enable cities and towns to implement Property Assessed Clean Energy (PACE) programs. While the City of Northampton is leading by example, its government is eager to launch initiatives such as a PACE program to expand energy efficiency and use of renewable energy throughout the community. Northampton sees this 20% Energy Reduction Plan as only the next step in a long-range plan.

## INTRODUCTION

### Background

Northampton is located along the banks of the scenic Connecticut River in Hampshire County, Massachusetts. In 2000, the population was 28,978 with 11,880 households and 5,880 families residing in the city according to the U.S. Census. Northampton is the county seat of Hampshire County and was dubbed "the Paradise of America" by the Swedish Nightingale, Jenny Lind. It is nicknamed The Paradise City.

### *Facilities*

The City of Northampton has, or pays energy costs for, approximately 29 significantly sized buildings, 14 water and sewage pump facilities, and a dozen smaller buildings and garages. This includes four elementary schools, one middle school, one high school, and one vocational-agricultural high school campus (six classroom / laboratory / administration buildings, three barns / greenhouses, and several sheds / storage facilities), five administration buildings, a Department of Public Works (DPW) complex (administration building, garage, sheds, transfer station), one water treatment plant, one sewage treatment plant, two fire stations, two libraries, one music hall, one senior center, one adult education center (James House), a parking garage, and several smaller facilities. Specifically, these buildings include:

- City Hall
- Memorial Hall
- Puchalski Municipal Bldg.
- Fire Department Headquarters
- Florence Fire Substation
- Police Station
- DPW Admin Building
- DPW Garage
- Transfer station
- DPW "Old salt shed"
- James House
- Senior Center
- Bridge St Elementary
- Feiker School
- Florence Learning Center
- Jackson St Elementary
- JFK Middle School
- Leeds Elementary
- Northampton High School
- Ryan Rd Elementary
- Smith Vocational & Agricultural High School (SVAHS) Campus
- Sewage Treatment Plant (four building campus)
- Water Dept. Admin Building
- Water Treatment Plant
- Landfill buildings
- Leachate Plant
- Rec. Dept. Admin Building
- Parking Garage
- 5 Recreation Comfort Stations
- 2 Cemetery Buildings
- 14 Water & Sewer Facilities

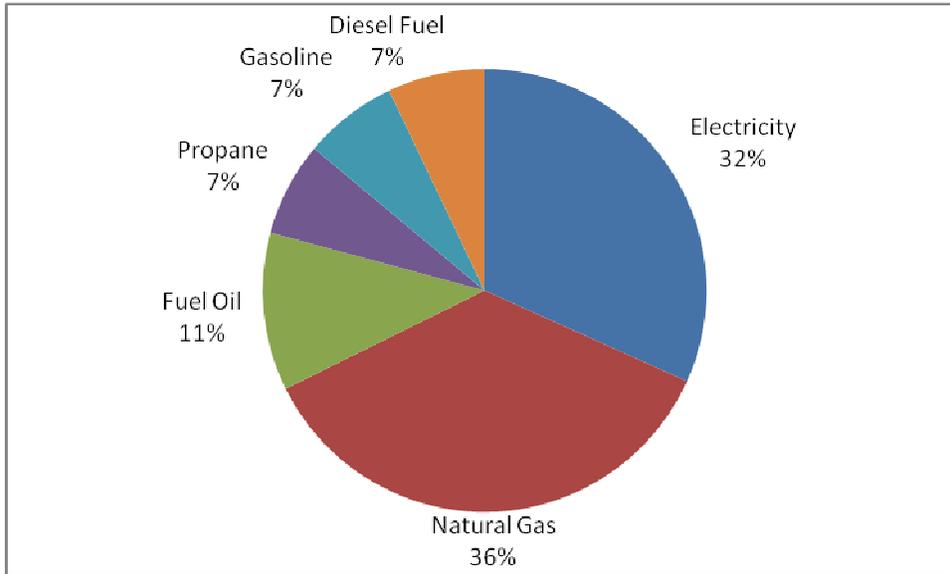
### *Vehicles*

The City has on-road licenses for 192 vehicles, most of which are heavy-duty public works vehicles, school buses, trailers, police cruisers, and fire trucks. Thirty-eight vehicles qualify as "non-exempt" under the DOER's Green Community Criteria 4.

### *Baseline Energy Use*

In fiscal year 2009 (FY09), Northampton consumed 10,695,126 kWh of electricity, 413,714 therms of natural gas, 95,426 gallons of #2 fuel oil, 86,704 gallons of propane, 63,531 gallons of gasoline, and 58,585 gallons of diesel fuel as summarized in Table 1. In addition to importing the above energy sources, Northampton consumes an average of 10,236 kWh a year produced on site by a 10 kW photovoltaic array at the JFK Middle School.

**City of Northampton Imported Energy Use for FY2009 (% MMBTU)**



**Table 1: City of Northampton Imported Energy Use (FY2009)**

| Fuel Type               | Qty. (conventional units) | Million BTU Equivalent (MMBTU) |
|-------------------------|---------------------------|--------------------------------|
| <b>Electricity</b>      | 10,695,126 kWh            | 36,491.8                       |
| <b>Natural Gas</b>      | 413,714 therms            | 41,371.4                       |
| <b>Fuel Oil</b>         | 95,426 gal.               | 13,264.2                       |
| <b>Propane</b>          | 86,704 gal.               | 7,890.1                        |
| <b>Gasoline</b>         | 63,531 gal.               | 7,878.1                        |
| <b>Diesel Fuel</b>      | 58,585 gal.               | 8,143.1                        |
| <b>Total all energy</b> |                           | <b>115,038.7</b>               |

*Energy Use Forecast*

Within the next five years, the City of Northampton expects to maintain its current fleet of 192 municipal vehicles. Construction for a new building for the Department of Public Works as well as a new headquarters for the Police Station is possible within the next five years. If completed, however, the old buildings will cease to be used, and the newly constructed buildings are expected to reduce energy use through more efficient building and operating practices. In addition, the City will sustain its commitment to the installation of LED parking-lot lights for any new parking-lot lighting for continued energy and maintenance savings.

**STATEMENT OF GOALS AND STRATEGIES**

In 2008, Northampton completed a 28-month comprehensive community planning process that resulted in publication of the *Sustainable Northampton Comprehensive Plan*, a vision for Northampton’s future and the principals, goals, and strategies required to support and implement that vision. Two of the *Plan’s* guiding principals read:

“Significantly improve energy efficiency in city buildings and programs, reduce greenhouse gas emissions, and encourage conservation and use of alternative and renewable energy sources throughout the community;”

“Make the city increasingly more walkable, bikeable, and transit oriented;”

In this document, under the section *Energy, Environment and Climate Protection*, the *Plan* sets goals to, “Reduce community’s and City’s energy demand and natural resource consumption” and “Reduce emissions of greenhouse gases [GHG]” with the following specific metrics:

- Trend in total energy demand from City facilities: 2 to 3% reduction per year
- Percent of municipal energy supplied by renewable sources: 25% energy demand supplied from renewable sources by 2017
- Match comparative performance standards from ICLEI, The Climate Registry, and others: Lead in local climate protection efforts
- Percent of FY2000 Equivalent CO<sub>2</sub> Emissions from all City functions: 8% below 2000 levels by 2010, 25% below by 2017, and 30% below by 2020

The *Plan* specifies thirty-six individual strategies and actions to meet these goals, many of which are already being implemented by City staff (including an Energy and Sustainability Officer), the Energy and Sustainability Commission, the Transportation Commission, Capital Improvement’s Commission, the Mayor, and City Council. Of specific note, several of these strategies and actions parallel Massachusetts Department of Energy Resources’ criteria to become a Green Community. These include:

- Investigate contracting with an Energy Service Company (ESCO) [for an Investment Grade Audit and a comprehensive energy performance contract]
- Prepare, as an addendum to *Sustainable Northampton*, a plan for climate protection for all sectors
- Keep energy audits and operations audits of all public buildings, vehicle fleets, and public lighting (street, parking, and traffic)
- Petition the Commonwealth of Massachusetts for state approval of Energy Star ratings as the minimum standards for local building code
- Present a report for public review that identifies where, as allowed by state law, the City land use ordinances could further address greenhouse gas emissions

Several years prior to development of the *Sustainable Northampton Plan*, in 2001, the Northampton City Council voted to join ICLEI’s Cities for Climate Protection Campaign and recognized the need to address the global warming problem swiftly, effectively, and on a local level. In 2001, the City completed its first Greenhouse Gas Emissions Inventory. The *Sustainable Northampton Plan* calls for the City to, “In 2011, update the City’s ICLEI inventory for climate protection with 2010 data to determine the City’s progress toward its GHG reduction targets and modify the City’s Climate Change Protection Action Plan as needed to ensure the City can meet its GHG reduction targets.”

Regionally, in 2008, Clare Higgins, Mayor of Northampton, signed a Memorandum of Agreement for Promoting and Implementing the *Pioneer Valley Clean Energy Plan* (2008) that calls for:

- a reduction in energy consumption to 2000 levels by the end of 2009 and reduction of that by 15% by 2020
- an 80% reduction in GHG emissions by 2050.
- a 28% reduction in energy use through efficiency improvements (in buildings) over 10 years.

In 2007, the City of Northampton joined the Environmental Protection Agency (EPA) New England's Community Energy Challenge and committed to specifically:

- Assess – benchmark – the energy performance of all municipal buildings, schools and/or drinking water/wastewater treatment facilities in our community
- Set a goal to reduce energy use in buildings by 10% or more
- Promote energy efficiency and renewable energy to companies and organizations in our community

## **RESULTS OF ENERGY USE BASELINE INVENTORY**

### **Inventory Tool Used**

Northampton uses Excel spreadsheets to track monthly energy use for all City facilities.

In the near future the City intends to use the DOER MassEnergyInsight on-line program concurrently with the Excel spreadsheets to track the City's energy use. Two City employees have attended trainings on this on-line data monitoring software and if the MassEnergyInsight program proves convenient and can provide the information that Northampton needs, the City anticipates transitioning to this on-line database to track monthly and annual energy use.

Beginning in 2007, the City also began to track energy use of some of its buildings concurrently with the EPA's on-line Portfolio Manager Program. Portfolio Manager, however, does not include categories for all of the City's facilities and does not provide any added convenience in use (e.g., it cannot receive City energy use data from utilities) and so did not supplant the City's use of Excel spreadsheets.

In 2000, through the efforts of an intern, Northampton analyzed its baseline energy use using ICLEI's Cities for Climate Protection Software. The City intends to repeat this in 2011 as a way to monitor its progress in reducing greenhouse gas emissions, however, the ICLEI software has not been used to track energy use annually.

### **Existing Municipal Energy Use**

Table 2 provides a full inventory of the City of Northampton's electricity, natural gas, fuel oil, and propane use in fiscal year 2009.

Table 3 provides a full inventory of the City of Northampton's consumption of unleaded and diesel fuels in fiscal year 2009. Note that this includes fuel consumed by all 192 of Northampton's vehicles including both "non-exempt" and "exempt" vehicles under the DOER's Green Community Criteria 4. The City is currently unable to distinguish fuel use per vehicle.

**Table 2: Municipal Buildings, and Parking, Street and Traffic Lighting - Fiscal Year 2009 Energy Use**

|   | Sq-Ft<br>(ft <sup>2</sup> ) | Electricity       |               | Natural Gas    |                 | Fuel Oil      |               | Propane       |              | MMBTU         |                        |
|---|-----------------------------|-------------------|---------------|----------------|-----------------|---------------|---------------|---------------|--------------|---------------|------------------------|
|   |                             | kWh               | MMBTU         | therms         | MMBTU           | Gal.          | MMBTU         | Gal.          | MMBTU        | Total         | per<br>ft <sup>2</sup> |
| City hall                               | 16,675                      | 94,800            | 323           |                |                 | 3,774         | 525           |               |              | 848           | .051                   |
| Memorial Hall                           | 19,875                      | 50,320            | 172           |                |                 | 7,017         | 975           |               |              | 1,147         | .058                   |
| Municipal Building                      | 13,545                      | 126,840           | 433           | 7,447          | 744.7           |               |               |               |              | 1,177         | .087                   |
| Senior Center                           | 20,934                      | 218,280           | 745           | 1,264          | 126.4           |               |               |               |              | 871           | .042                   |
| James House Adult Learning              | 8,500                       | 29,120            | 99            |                |                 | 4,313         | 600           |               |              | 699           | .082                   |
| Academy of Music                        | 10,178                      | 72,360            | 247           |                |                 | 8,942         | 1,243         |               |              | 1,490         | .146                   |
| Main Fire HQ                            | 21,246                      | 281,440           | 960           | 14,970         | 1497            | 5,159         | 717           |               |              | 3,174         | .149                   |
| Florence Fire Substation                | 7,832                       | 51,833            | 177           |                |                 | 5,161         | 717           |               |              | 894           | .114                   |
| Police HQ                               | 5,000                       | 188,960           | 645           |                |                 |               |               |               |              | 645           | .129                   |
| DPW Administration Bldg.                | 3,868                       | 56,092            | 191           |                |                 |               |               |               |              | 191           | .049                   |
| Water Department Administration         | 6,385                       | 11,281            | 38            | 2,085          | 208.5           |               |               |               |              | 247           | .039                   |
| DPW Garage                              | 20,700                      | 155,360           | 530           | 285            | 28.5            | 16,813        | 2,337         |               |              | 2,896         | .140                   |
| Misc. DPW Campus Energy Use             | n/a                         | 33,337            | 114           |                |                 |               |               |               |              | 114           |                        |
| Waste water treatment plant             | 22,760                      | 2,010,600         | 6,860         |                |                 | 5,985         | 832           | 52,288        | 4758         | 12,450        | .547                   |
| Waste water pumping facilities          | n/a                         | 59,623            | 203           | 646            | 64.6            |               |               |               |              | 268           |                        |
| Water treatment plant                   | 40,740                      | 408,300           | 1,393         |                |                 |               |               | 32,274        | 2937         | 4,330         | .106                   |
| Water pumping facilities                | n/a                         | 209,895           | 716           | 499            | 49.9            |               |               |               |              | 766           |                        |
| Landfill and cemeteries                 | n/a                         | 113,556           | 387           | 2,077          | 207.7           | 4,897         | 681           |               |              | 1,276         |                        |
| Bridge Street Elementary                | 60,489                      | 215,280           | 735           | 28,808         | 2880.8          |               |               |               |              | 3,615         | .060                   |
| Jackson Street Elementary               | 73,500                      | 311,700           | 1,064         | 34,583         | 3458.3          |               |               |               |              | 4,522         | .062                   |
| Leeds Elementary                        | 72,085                      | 249,240           | 850           | 43,157         | 4315.7          |               |               |               |              | 5,166         | .072                   |
| Ryan Road Elementary                    | 53,332                      | 184,080           | 628           | 19,970         | 1997            |               |               |               |              | 2,625         | .049                   |
| JFK Middle School                       | 141,851                     | 859,500           | 2,933         | 79,555         | 7955.5          |               |               |               |              | 10,888        | .077                   |
| Northampton High School                 | 203,617                     | 1,159,000         | 3,955         | 68,333         | 6833.3          |               |               |               |              | 10,788        | .053                   |
| Smith Vocational and Agricultural HS    | 173,720                     | 1,232,000         | 4,204         | 104,824        | 10482.4         | 7,770         | 1,080         | 2,142         | 195          | 15,961        | .092                   |
| Feiker Pre-School                       | 11,256                      | 21,377            | 73            |                |                 | 3,856         | 536           |               |              | 609           | .054                   |
| Florence Community Center               | 29,253                      | 88,653            | 302           |                |                 | 12,281        | 1,707         |               |              | 2,010         | .069                   |
| Forbes Library                          | 44,274                      | 326,080           | 1,113         |                |                 | 9,458         | 1,315         |               |              | 2,427         | .055                   |
| Lilly Library                           | 9,981                       | 89,520            | 305           | 5,211          | 521.1           |               |               |               |              | 827           | .083                   |
| Street lights (S1, S2, and S3 accounts) | n/a                         | 1,173,597         | 4,004         |                |                 |               |               |               |              | 4,004         |                        |
| Misc. outdoor metered lighting          | n/a                         | 58,796            | 201           |                |                 |               |               |               |              | 201           |                        |
| Parking lot lights (metered)            | n/a                         | 336,489           | 1,148         |                |                 |               |               |               |              | 1,148         |                        |
| Signal Lights                           | n/a                         | 72,186            | 246           |                |                 |               |               |               |              | 246           |                        |
| Misc other accounts                     | n/a                         | 145,631           | 497           |                |                 |               |               |               |              | 497           |                        |
| <b>Total</b>                            |                             | <b>10,695,126</b> | <b>36,492</b> | <b>413,714</b> | <b>41,371.4</b> | <b>95,426</b> | <b>13,264</b> | <b>86,704</b> | <b>7,890</b> | <b>99,017</b> |                        |

**Table 3: All Municipal Vehicles - Fiscal Year 2009 Energy Use**

|                        | <b>Unleaded (Gal)</b> | <b>Diesel (Gal)</b> |
|------------------------|-----------------------|---------------------|
| DPW-Streets            | 1,429                 | 22,683              |
| WWTP                   | 2,384                 | 1,416               |
| Sewer                  | 470                   | 7,879               |
| Water Dept.            | 5,441                 | 7,929               |
| DPW-Recreation Crew    | 1,960                 | 3,175               |
| Cemetery               | 1,325                 | 1,737               |
| DPW-Engineering        | 2,533                 | 127                 |
| Police                 | 29,825                | 30                  |
| SVAHS (and SVAHS Farm) | 4,599                 | 2,178               |
| K-12 School            | 3,020                 | 6,171               |
| Council on Aging       | 379                   | -                   |
| Fire Department        | 4,776                 | 16                  |
| Libraries              | 69                    | -                   |
| Central Services       | 2,291                 | -                   |
| Recreation Department  | 257                   | -                   |
| Parking                | 2,419                 | 223                 |
| Bldg. Inspector        | 139                   | -                   |
| Board of Health        | 213                   | -                   |
| Landfill               | 5                     | 5,024               |
| <b>Total Gallons</b>   | <b>63,531</b>         | <b>58,585</b>       |
| <b>Total MMBTU</b>     | <b>7,878</b>          | <b>8,143</b>        |

**Existing efficiency measures implemented in last 2 years***LED Parking Lot Lights (fall 2009)*

In the fall of 2009, Northampton upgraded sixteen high-pressure sodium (HPS) lighting fixtures in the Armory Street Parking Lot to LEDs.

*Lighting Upgrade in Parking Garage (winter '09-'10)*

During the winter of '09-'10 the City replaced 220 HPS interior parking garage fixtures with high-efficiency fluorescent fixtures.

*13 kW PV Array in James House Adult Learning Center (spring 2010)*

The City installed a 13 kW photovoltaic array on the James House Learning Adult Center that began producing power in March 2010.

*Improved Lighting and HVAC at James House Adult Learning Center (winter '09-'10 and ongoing)*

Note, in FY 2009 – Northampton's baseline year – the James House was underutilized due to a hold-up in renovation of the building. A 2008 scoping study of the James House building projected that, with no lighting or HVAC upgrades, when the full building is brought into use as an adult learning center, the building will consume 115,142 kWh. The FY09 oil consumption of 4,300 gallons is consistent with the building's historic need for heating oil.

With substantial funding from MassCEC, the City is in the process of upgrading the lighting and HVAC systems at the James House Adult Learning Center, which will result in a net energy reduction of 34,200 kWh and 4,300 gallons of oil annually once the full building is brought into use as an adult learning center.

*Senior Center - Silver LEED Designed, Geothermal Heat Pumps (Spring 2007)*

In April 2007, Northampton completed construction of a silver-LEED designed Senior Center that is heated and cooled with a ground-source heat pump system. By investing in ground coupled heat pumps to cool the space, condition the ventilation air, and heat water for supplementary radiation, the City reduced the calculated energy load of the building by 1,337 MMBTU per year over what the building would have used if heated and cooled with a more conventional gas-fired boiler and reciprocal chiller.

*Landfill gas to energy – 800kW facility (March 2008)*

In March 2008, Northampton began selling landfill gas to a private vender (Ameresco) to power a 0.8 MW landfill gas to energy facility. According to the US EPA, this facility provides an annual emissions reduction equivalent to reducing the City’s gasoline consumption by 3,828,533 gallons a year, or a total reduction of energy (MMBTU) that is four times the City’s current energy use.

*Adjustments to Baseline Energy Use*

In order to accurately account for the impact of some of the energy conservation measures being implemented by Northampton, adjustments to the baseline are needed.

- **Adjustment due to Reduced Energy Use In Baseline Year at the James House**  
As previously mentioned, the City expects that the James House would consume 115,142 kWh a year once the full building is brought into use as an adult learning center if no efficiency measures were taken. However, in our baseline year (FY09), because the building was underutilized due to renovations, it consumed only 29,120 kWh. Therefore, if the City is to consider the effects of efficiency measures taken at the James House, the baseline electrical use value must be adjusted by adding in 86,021 kWh to bring the annual consumption of electricity up to 115,142 kWh.
- **Adjustment due to Geothermal vs. Conventional HVAC System at Senior Center**  
Similarly, if Northampton is to consider the effects of installing a geothermal HVAC system at the James House, it must adjust the baseline energy use at the Senior Center to one that would have been experienced had the City installed a conventional HVAC system.

**Table 4: Adjusted Baseline Energy Use (MMBTU)**

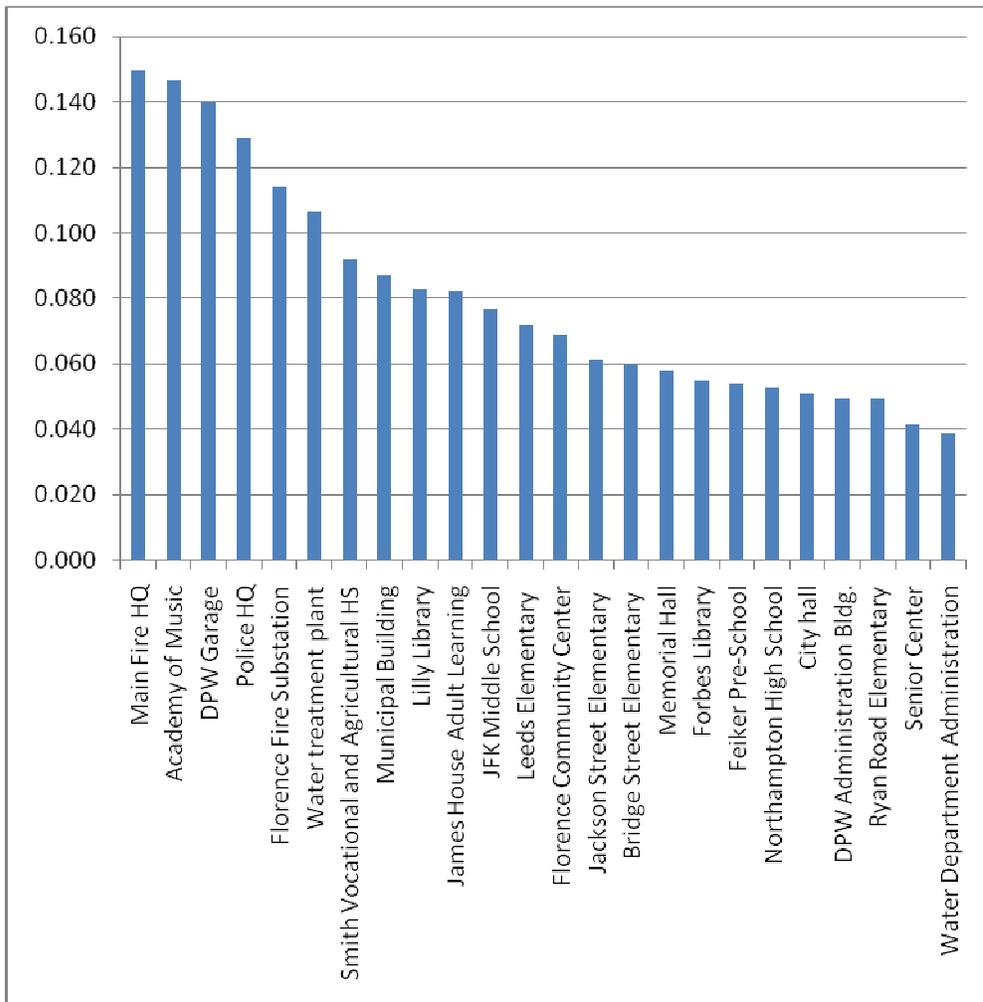
|  | Electricity   | Natural Gas     | Fuel Oil      | Propane      | Gasoline     | Diesel       | Total          |
|--|---------------|-----------------|---------------|--------------|--------------|--------------|----------------|
| <b>FY09</b>  | <b>36,492</b> | <b>41,371.4</b> | <b>13,264</b> | <b>7,890</b> | <b>7,878</b> | <b>8,143</b> | <b>99,017</b>  |
| Reduced Energy Use In FY09 at the James House            | 294           |                 |               |              |              |              | 294            |
| Geothermal vs. Conventional HVAC System at Senior Center |               |                 |               |              |              |              | 1,337          |
| <b>Adjusted Baseline</b>                                 |               |                 |               |              |              |              | <b>116,669</b> |

## Areas of least efficiency/greatest waste

Northampton's largest energy users per square-foot are: the waste water treatment plant, fire department headquarters, Academy of Music, DPW Garage, police headquarters, Florence fire substation, water treatment plant, Smith Vocational and Agricultural High School, municipal building, Lilly Library, and James House Adult Learning Center. (See graph below of MMBTU per area of all buildings but the waste water treatment plant.) The JFK Middle School consumes the highest level of energy per sq.-ft. of all the K-12 school buildings, however, this is most likely due to it housing the community pool.

Historically, the City has directed most of its energy efficiency efforts at the K-12 public schools, therefore, it is not surprising to find that other municipal buildings use the greatest energy per square foot. However, the K-12 schools, due to their high level of total energy consumption, still provide some of the highest value in energy savings as has been revealed in an investment grade audit of Northampton's municipal facilities.

## MMBTU per Square-Foot



In 2008, the City of Northampton solicited an Investment Grade Audit (IGA) through a competitive procurement process under Massachusetts General Laws, Chapter 25a, Section 11i. Subsequently, the City contracted with ConEdison *Solutions*® (“CES”) to

conduct the audit, which was completed by CES on February 16, 2010. After City review, CES finalized a package of energy conservation measures (ECMs) in 33 buildings to be included in a performance contract between the City and CES. The final IGA identified the annual cost savings shown in Table 5. When looked at in magnitude of annual savings, many of the K-12 school buildings will still provide some of the highest energy savings.

**Table 5: Cost Savings per Building Sorted by Annual Savings**

| Building                    | Annual Cost Savings<br>(FY09 energy prices) | % Cost Reduction |
|-----------------------------|---|------------------|
| WWTP SPB                    | \$93,469                                    | 48.4%            |
| Forbes Library              | \$36,261                                    | 32.2%            |
| Leeds Elementary            | \$31,719                                    | 35.4%            |
| JFK Middle School           | \$28,626                                    | 12.8%            |
| Water Treatment Plant       | \$28,405                                    | 24.8%            |
| Smith Voc Building B        | \$27,975                                    | 27.1%            |
| High School                 | \$27,785                                    | 10.5%            |
| Jackson Elementary          | \$24,943                                    | 22.9%            |
| Smith Voc Building A        | \$23,011                                    | 24.9%            |
| DPW Garage                  | \$15,570                                    | 41.3%            |
| Bridge Street Elementary    | \$14,669                                    | 21.2%            |
| Ryan Rd Elementary          | \$13,267                                    | 25.1%            |
| Memorial Hall               | \$12,729                                    | 40.1%            |
| Academy of Music            | \$12,054                                    | 35.0%            |
| Fire Dept. HQ               | \$11,095                                    | 20.5%            |
| Smith Voc Building D        | \$10,049                                    | 20.5%            |
| Leachate Bldg               | \$9,460                                     | 57.2%            |
| Florence Fire               | \$9,269                                     | 40.3%            |
| Smith Voc Building C        | \$8,713                                     | 28.1%            |
| Feiker Pre-School           | \$7,150                                     | 41.2%            |
| City Hall                   | \$6,791                                     | 19.7%            |
| WWTP Control Bldg           | \$6,036                                     | 10.7%            |
| Municipal Building          | \$4,479                                     | 13.7%            |
| Senior Center               | \$3,643                                     | 12.2%            |
| Lilly Library               | \$3,473                                     | 14.6%            |
| WWTP Flood Bldg             | \$2,715                                     | 29.8%            |
| Smith Voc Multi-spec Barn   | \$2,338                                     | 24.9%            |
| Smith Voc Small Animal Barn | \$1,674                                     | 33.6%            |
| WWTP Maintenance Bldg       | \$1,562                                     | 23.4%            |
| WWTP Digester Bldg          | \$1,494                                     | 32.3%            |
| Misc Bldgs                  | \$1,156                                     | 38.8%            |
| Smith Voc Admin Bldg        | \$489                                       | 8.9%             |
| Recreation Dept. Admin      | \$486                                       | 8.9%             |

## **Areas that can be Most Easily Addressed**

### *Municipal Facilities via Performance Contract*

Northampton's energy services performance contract with ConEdison Solutions will enable the City to fold a large number of conservation measures into one far-reaching package. Not only does this allow the City to design a comprehensive program of efficiency improvements, but it also greatly simplifies the procurement process that the City would otherwise have to engage in to complete these same set of conservation measures and it does not require up-front capital expenditures.

### *Non-tax Income Streams:*

Northampton's enterprise funds allow the City to implement least-cost efficiency improvements that benefit a specific enterprise fund without using tax dollars. This provides enterprise fund projects freedom from the need to compete for tight capital improvement funds. Fees from parking and water supply will support efficiency improvements at the City's parking lots and in its water delivery system respectively.

Measures underway include upgrading HPS lamps in the City's parking lots with high-efficiency florescent and LED fixtures and inserting a small conduit hydroelectric turbine (11.8 kW) at one of two pressure reduction valve stations in the City's water transmission system. Lighting upgrades at the Armory Street parking lot and parking garage are expected to reduce electric use by 94,870 kWh a year. The 11.8 kW hydroelectric turbine is expected to produce 73,200 kWh of electric power annually.

The City estimates that lighting upgrades at the City's six surface parking lots, along the bike path, and along City streets with metered pole top streetlights, the operations of which are paid for through enterprise funds, can reduce electricity consumption by an additional 115,000 kWh annually.

Securing grants provides another way the City can avoid using tax-dollars for efficiency improvements. Currently the City is completing HVAC and lighting upgrades to the James House Adult Learning Center through a grant by Massachusetts Technology Collaborative Renewable Energy Trust (Now Massachusetts Clean Energy Center).

## **SUMMARY OF ENERGY AUDIT**

CES's Investment Grade Audit (IGA) describes a wide array of Energy Conservation Measures ("ECM"s) at municipal buildings and schools throughout the city. The proposed package of ECMs to be included in a performance contract between the City and CES has a project cost of \$6,500,000. The long-term service agreement (15 years) with operation and maintenance measures needed to ensure efficiency savings is estimated to cost \$870,000.

### **Summary of Proposed CES Investments at the City of Northampton**

1. ECM Category 1: Upgrade Lighting and Lighting Controls: Selected lighting fixture replacements, comprehensive lamp/ballast retrofits, and lighting control upgrades in all building. New, high efficiency fixtures or lamp/ballast retrofits will reduce the connected kW of lighting systems. Improved occupancy and daylight controls will reduce lighting system run hours.
2. ECM Category 2: Major HVAC System Upgrades: Proposed upgrades include replacement of inefficient oil-fired boilers and inefficient oil-fired burners; installation of high efficiency cooling systems, infrared heating systems, and dehumidification systems;

and improvement of warm-up time with heating capacity upgrades.

3. ECM Category 3: Process System Upgrades: Proposed improvements include upgrade of process odor control system; replacement of process dehumidification system; installation of VFDs on plant water booster pump system, new pumps and VFDs to design pool water pumping system, and pool cover; and reduction of irrigation water use.
4. ECM Category 4: New Central Energy Management Control System and Upgrade/Repair Standalone Controls and Mechanical Deficiencies: Upgrades include new central energy management control system and repair of standalone controls; reduction of steam use; recommissioning pneumatic and existing computerized controls, and installation of self-contained temperature control valves.
5. ECM Category 5: Building Shell Upgrades: Improvements include installation of new double-pane windows and storm windows; upgrade of ceiling/roof insulation; and replacement/upgrade of weather-stripping.
6. ECM Category 6: Minor HVAC Projects: Upgrades include replacement of all steam traps with mechanical traps, improvement of control of DHW recirculation pumps and/or installation of instantaneous DHW heaters; and reduction of mechanical room infiltration and heating in seldom-used areas.
7. ECM Category 7: Install Improved Local (Non-EMCS) Controls: Improvements include installation of local programmable thermostats, bus engine block heater controls, and vending machine controls.
8. ECM Categories 8-11: Renewable Projects, Water Savings, and Misc.: Projects include installation of solar DHW heaters, Trombe wall outdoor air preheaters, water-saving fixtures, kitchen hood controls, and high-efficiency motors.

## **SUMMARY OF FOSSIL FUEL REDUCTION MEASURES**

Increasing energy efficiency is Northampton's top priority strategy to reduce fossil fuel consumption. The City is counting on a municipal-wide energy efficiency project of most existing City facilities to achieve the bulk of our 20% energy use reductions and will enact a long-term services agreement with an energy services company to implement a measurement and verification plan to maintain this efficiency. All new facilities will be built to a high-efficiency level; an example being the new LEED-Silver designed Senior Center completed in early 2007.

Where economically feasible, the City will install renewable energy systems to offset imported energy use. Such projects become even more attractive when they combine measures to increase efficiency along with adding a renewable energy system as was done with the James House energy upgrade project. As the State has changed its incentives for installation of renewable systems to encourage larger systems, Northampton will explore ways to use these incentives to build systems with capacities of more than 200 kW.

While Northampton has already begun to purchase higher efficiency vehicles, the City will enhance its efforts by upgrading its systems for tracking fuel use per vehicle and by meeting the specifications of the City's new fuel-efficient vehicle purchasing policy. And while,

increasing the efficiency of its fleet will remain the highest priority strategy, replacing fossil-based diesel fuels with biodiesel will also be used to reduce consumption of fossil fuels.

The City will continue to improve the efficiency levels of its streetlights and will expand on the leadership it has already shown in converting parking lot lights over to high-efficiency LED lamps.

## SPECIFIC FOSSIL FUEL ENERGY REDUCTION MEASURES

### Energy Conservation Tasks to Achieve 20% Reduction in 5 Years

#### City Facilities

Northampton will move forward with a performance contract in two phases. Phase one will include 33 facilities and, based on ConEdison *Solutions's* investment grade audit, will produce energy reductions as shown in Table 6.

**Table 6: Energy Use Reductions by Fuel Type per Energy Conservation Type for Northampton's 2010 Performance Contract**

|  | Electricity |       | Natural Gas |       | #2 Fuel Oil |       | Propane |       | Total  |
|--|-------------|-------|-------------|-------|-------------|-------|---------|-------|--------|
|  | kWh         | MMBTU | Therms      | MMBTU | Gal         | MMBTU | Gal     | MMBTU | MMBTU  |
| ECM-1: Lighting and Controls Upgrades        | 355,914     | 1,214 |             |       |             |       |         |       | 1,214  |
| ECM-2: Major HVAC System Upgrades            | 9,906       | 34    | -29,248     | -2925 | 44,023      | 6,119 | 1,815   | 165   | 3,393  |
| ECM-3: Process Upgrades                      | 313,455     | 1,070 | 2,000       | 200   | 1,206       | 168   | 28,312  | 2,576 | 4,014  |
| ECM-4: EMCS Upgrades                         | 809,976     | 2,764 | 45,801      | 4580  | 11,948      | 1,661 | 14,528  | 1,322 | 10,327 |
| ECM-5: Building Shell Upgrades               | 483         | 2     | 9,725       | 973   | 7,457       | 1,037 | 1,272   | 116   | 2,126  |
| ECM-6: Minor Equipment Replacement Upgrades  |             |       | 2,118       | 212   | 4,032       | 560   | 755     | 69    | 841    |
| ECM-7: Local Controls and Plug Load Upgrades | 25,802      | 88    | 477         | 48    | 1,134       | 158   | 1,283   | 117   | 410    |
| ECM-8: Cogeneration and Renewables           | 9,030       | 31    | 2,318       | 232   | 193         | 27    |         |       | 289    |
| ECM-9: Water Upgrades                        |             |       | 2,412       | 241   | 21          | 3     |         |       | 244    |
| ECM-10: Kitchen Upgrades                     | 21,575      | 74    | 6,878       | 688   |             |       |         |       | 761    |
| ECM-11: PHE Motors Upgrades                  | 5,198       | 18    |             |       |             |       |         |       | 18     |
| Total Utility Savings:                       | 1,551,339   | 5,293 | 42,481      | 4248  | 70,014      | 9,732 | 47,965  | 4,365 | 23,638 |

Phase II will include a selection of facilities for which the City is deciding on their use and timeframe for renovation, expansion or disposal. These include building a replacement Police Headquarters, combining the Water Department and DPW administration buildings at the current location of the DPW administration building, expanding the DPW garage, and deciding on whether to keep or sell the Florence Community Center.

Replacement buildings are expected to reduce energy use due to ongoing City practice and policy to construct all new buildings to a LEED-Silver level design. Specifically, in March 2010, the Northampton Energy and Sustainability Commission issued the following recommended policy:

All new significant City buildings or major building renovations shall

1. Meet LEED™ certification standards; and
2. Achieve as many of the LEED categories of *Energy and Atmosphere* and *Sustainable Sites* pertaining to energy efficiency, renewable energy, and sustainable transportation strategies as feasible and practicable; and
3. If practical, be LEED-certified.

In April 2007, Northampton completed construction of a silver-LEED designed Senior Center that is heated and cooled with a ground-source heat pump system. By investing in ground coupled heat pumps to cool the space, condition the ventilation air, and heat water for supplementary radiation, the City reduced the calculated energy load of the building by 1,337 MMBTU per year over what the building would have used if heated and cooled with a more conventional gas-fired boiler and reciprocal chiller.

The City has completed phase one of an upgrade of all light fixtures at the James House Adult Learning Center to high-efficiency light fixtures and lamps and installation of occupation sensors in all rooms. Once completed and the full building is brought into use as an adult learning center this energy conservation measure is expected to reduce annual consumption of electricity by 30,000 kWh.

The City has begun to replace use of the oil-fired furnace and single oversized air-cooled chiller that are currently used to heat and cool the James House building with multiple air-source heat pumps under timed thermostatic control. Once complete and the full building is brought into use as an adult learning center this will reduce the oil use at the James House by an estimated 4,300 gallons a year, replacing this heat source with an electricity-driven high-efficiency heat pump system (HSPF of 9.0) that is expected to use 51,800 kWh per year, and reduce summer-time consumption of electricity for cooling by 30% (28,000 kWh).

The City will reduce energy use through management and behavior changes as well. The Northampton Energy and Sustainability Commission will produce a Sustainability Practices Guide for municipal employees that will reduce energy use, increase recycling, and promote sustainable transportation habits.

#### **ENERGY CONSERVATION TASK 1-A**

- **Task:** Guaranteed Energy Services Performance Project – Phase I
- **Timeline:** Phase I construction to begin in the summer of 2010 and run for 18 months.
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Mayor, Financial Director, City Council.
- **Projected Annual Energy Savings:** 23,638 MMBTU
- **Estimated Project Capital and Operating Costs:**
  - Project cost = \$6,500,000

- Long Term Service Agreement = \$870,000

#### **ENERGY CONSERVATION TASK 1-B**

- **Task:** Guaranteed Energy Services Performance Project – Phase II
- **Timeline:** Phase II IGA and construction contract to be developed in the fall of 2010.
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Mayor, Financial Director, City Council.
- **Projected Annual Energy Savings:** TBD
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 1-C**

- **Task:** Ground Source Heat Pump at Senior Center
- **Timeline:** Completed April 2007
- **Projected Annual Energy Savings:** 1,337 MMBT

#### **ENERGY CONSERVATION TASK 1-D**

- **Task:** HVAC and Lighting Efficiency at James House
- **Timeline:** Phase I was completed in spring of 2010. Phase II to be completed in fall 2010.
- **Responsible Party(ies):** Central Services, Community and Economic Development Director, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** 618 MMBTU
- **Estimated Project Capital and Operating Costs:**
  - Lighting Upgrades: \$17,600
  - HVAC improvements: \$57,000
  - Grant support: \$31,452

#### **ENERGY CONSERVATION TASK 1-E**

- **Task:** Sustainable Practices for City Government
- **Timeline:** Develop guiding document 2010 - 2011
- **Responsible Party(ies):** Energy and Sustainability Commission, Energy and Sustainability Officer, Department Heads, Mayor
- **Projected Annual Energy Savings:** TBD
- **Estimated Project Capital and Operating Costs:** TBD

#### *Vehicles*

While Northampton has recently adopted a fuel-efficient vehicle purchasing policy, the City has been purchasing high efficiency vehicles for several years. For instance, in 2007, the DPW switched from purchasing four wheel drive (4WD) to two wheel drive (2WD) vehicles used for reading water meters and Ford Escape Hybrid utility vehicles. Similarly, the parking division began purchasing Kia Rios (at 24 mpg) for light-duty parking lot chores. Adoption of

the fuel-efficient vehicle purchasing policy will result in the City purchasing even higher efficiency vehicles.

In addition, in 2007 Northampton's DPW began to use a biodiesel/diesel blend in all diesel vehicles. They found that a 20% biodiesel blend in warm months and 5% biodiesel blend in cold months worked well. Unfortunately, due to the national financial downturn's effects on City finances (i.e., budget cuts), the DPW went back to 100% diesel in 2008.

Currently, the City tracks vehicle fuel use by individuals, which effectively provides a history of fuel use by department. In addition, fuel use is not matched to miles driven for any vehicles. The City has begun to investigate ways to track fuel use per vehicle in a way that can be used to monitor individual vehicle's fuel efficiency fill up by fill up.

#### **ENERGY CONSERVATION TASK 2-A**

- **Task:** Upgrade to high efficiency vehicles
- **Timeline:** Ongoing
- **Responsible Party(ies):** City Department Heads, Mayor
- **Projected Annual Energy Savings:** TBD – Inadequate tracking of fuel use per vehicle prohibits an estimate of savings from being made at this time. Anticipate a 3% to 6% energy use reduction per vehicle upgrade.
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 2-B**

- **Task:** Upgrade Tracking of Fuel Use by Individual Vehicles
- **Timeline:** 2010 or 2011
- **Responsible Party(ies):** DPW, Energy and Sustainability Officer, Energy and Sustainability Commission, Mayor
- **Projected Annual Energy Savings:** N/A – will enable planning for measures that will reduce energy use.
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 2-C**

- **Task:** Use a blend of biodiesel in all DPW diesel vehicles
- **Timeline:** Anticipated to start in 2011 or 2012
- **Responsible Party(ies):** DPW, Mayor, Financial Director
- **Projected Annual Energy Savings:** 424 MMBTU<sup>1</sup>
- **Estimated Project Capital and Operating Costs:** \$6,000 annual price premium for biodiesel blend versus 100% diesel plus added cost of increased fuel filter changes.

#### *Street, Parking, and Traffic Lighting*

Northampton has already upgraded all of its red and green traffic lights to LED fixtures. A cost and energy use analysis conducted in 2007 by the Energy and Sustainability Officer

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<sup>1</sup> Based on biodiesel providing a life-cycle reduction in fossil fuel use of 78% and 20% blend used for 7 months and 5% blend used for 5 months of the year

determined that the energy savings that could be realized by upgrading yellow traffic lights to LEDs were not worth it, the funds would be more effectively spent on other efficiency projects.

In the fall of 2009, Northampton replaced sixteen 400-watt high-pressure sodium (HPS) parking lot fixtures in the Armory Street parking lot with eight 128-watt LED fixtures and eight 96-watt LED fixtures. These are expected to reduce the City's energy use by 23,564 kWh a year.

During the winter of '09-'10 the City replaced all 220 70-watt HPS interior parking garage fixtures with high-efficiency fluorescent fixtures with photovoltaic controls. These are expected to reduce the City's energy use by 71,306 kWh a year.

The City's Parking Division maintains and operates cobra-head light fixtures at seven parking lots (Hampton Ave., South St., Union Station, Strong Ave., Masonic, James House, and Round House); pole-top fixtures similar to the Armory Street lot at Hampton Avenue, Gothic Street, Strong Avenue, Pearl Street, and along the bike path from Hampton Avenue to the railroad bridge; and six pole-top fixtures on top of the parking garage. The parking division will continue to phase in LED and other high efficiency light fixtures at all of these sites over the next one to five years. LED fixtures for the six pole-top fixtures on top of the parking garage are already on order. The City roughly estimates an annual savings of about 5 times the savings seen at the Armory Street lot once all upgrades are complete.

The City has and continues to seek grant funds to implement a LED streetlight pilot project to determine cost-effectiveness, energy reduction potential, and user acceptability of LED fixtures for street and sidewalk lighting.

Twenty years ago, Northampton completed a municipal streetlight survey to evaluate light levels throughout the city and recommend improvements to reduce energy use and improve traffic safety. Eight out of ten recommended phases from the study were completed that resulted in a net removal of 691 streetlights and an overall 14% reduction in lumens. Since then, new construction and individual requests by property owners to adjust light levels in their neighborhoods have occurred and the City has passed a dark-sky ordinance.

Over the next year or two, Northampton intends to conduct a new municipal streetlight survey taking into consideration new technologies (such as LED light fixtures), current recommended light levels for traffic safety, and specifications from the dark sky ordinance. At a minimum, the City anticipates achieving energy and cost savings that were identified in phases 9 and 10 of the 1992 survey.

### **ENERGY CONSERVATION TASK 3-A**

- **Task:** High Efficiency Florescent and LED Fixtures at Parking Facilities: Phase I
- **Timeline:** Completed in the fall/winter of 2009
- **Responsible Party(ies):** Parking Commissioner, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** 324 MMBTU
- **Estimated Project Capital and Operating Costs:**
  - Project Cost: \$60,000
  - Utility Rebates: \$22,514

- Simple payback LED fixtures: 1.5 years
- Simple payback florescent fixtures: 4 years

#### **ENERGY CONSERVATION TASK 3-B**

- **Task:** High Efficiency Florescent and LED Fixtures at Parking Facilities: Future Phases
- **Timeline:** 2011 - 2015
- **Responsible Party(ies):** Parking Commissioner, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** 400 MMBTU once all parking facilities are addressed
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 3-C**

- **Task:** LED Streetlight Pilot Project
- **Timeline:** ASAP 2011 - 2015
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** TBD
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 3-D**

- **Task:** Streetlight Survey
- **Timeline:** 2011/2012
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** N/A – will enable planning for measures that will reduce energy use.
- **Estimated Project Capital and Operating Costs:** TBD

#### **ENERGY CONSERVATION TASK 3-E**

- **Task:** Streetlight Efficiency Improvements
- **Timeline:** 2013 - 2015
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Mayor
- **Projected Annual Energy Savings:** TBD
- **Estimated Project Capital and Operating Costs:** TBD

#### *Municipally-owned and -operated clean renewable or alternative energy installations*

In March 2008, Northampton began selling landfill gas to a private vender (Ameresco) to power a 0.8 MW landfill gas to energy facility. According to the US EPA, this facility will provide a total equivalent annual emissions reduction of 4,051 tons of CO<sub>2</sub>, and 1,594 tons of methane (CH<sub>4</sub>), equivalent to reducing the City's gasoline consumption by 3,828,533 gallons a year. While the City is not considering this measure equivalent to reducing energy

use, it is notable that 3,828,533 gallons of gasoline has an energy content of 474,738 MMBTU, which is more than four times Northampton's adjusted baseline energy use.

| <b>Total Equivalent Emissions Reduced</b><br>[Total = Direct + Avoided] |                               |                                 |
|---|-------------------------------|---------------------------------|
| <b>MMTCO<sub>2</sub>E/yr</b>  | <b>tons CH<sub>4</sub>/yr</b> | <b>tons CO<sub>2</sub>/yr</b>   |
| million metric tons of carbon dioxide equivalents per year              | tons of methane per year      | tons of carbon dioxide per year |
| 0.0340  | 1,594                         | 4,051                           |

In March 2010, the City began producing power from a 13 kW photovoltaic array installed on the roof of the James House Learning Adult Center. This array is expected to offset 13,114 kWh of City electricity demand a year.

In October 2009, Northampton received authority from the US IRS to issue \$313,925 in New Clean Renewable Energy Bonds (New CREBs) under section 54C of the Internal Revenue Code, for two photovoltaic projects in the City; one a 100 kW system at the Smith Vocational and Agricultural High School (SVAHS) and a second 13 kW system on the Jackson Street elementary school (JSS). This would cover roughly 45% of the cost of these two projects. The anticipated energy savings due the estimated annual production of 139,960 kWh of electricity from these two projects would be enough to pay off the CREBs. The City is currently seeking funds to pay the remaining project costs. If funds can not be obtained, the City will evaluate soliciting a power purchase agreement (PPA) for one, both, or a modified version of these two projects.

Northampton's landfill is currently slated to close in 2012, however, before that time an expansion may be approved. While the City does not want to consider installing a photovoltaic array on the capped portions of the landfill while the current sections are in operation (i.e., before 2012), it may once the current section being filled is filled in. At that point, the City would consider soliciting a power purchase agreement (PPA) for a photovoltaic array of 200 kW or more to be installed on the capped portion of the landfill.

**ENERGY CONSERVATION TASK 4-A**

- **Task:** Landfill Gas to Energy
- **Timeline:** Completed
- **Responsible Party(ies):** DPW
- **CO<sub>2</sub>-equivalent Emissions Reduction from Equivalent Annual Energy Savings of:** 3,828,533 gallons of gasoline

**ENERGY CONSERVATION TASK 4-B**

- **Task:** 13 kW Photovoltaic Array on the James House
- **Timeline:** Completed March 2010
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Community and Economic Development Director
- **Projected Annual Energy Offset:** 45 MMBTU

- **Estimated Project Capital and Operating Costs:**
  - Project Costs: \$104,838
  - Grants: \$104,838

**ENERGY CONSERVATION TASK 4-C**

- **Task:** 113 kW Photovoltaic Arrays at SVAHS and JSS
- **Timeline:** 2010-2011
- **Responsible Party(ies):** Central Services, Energy and Sustainability Officer, Smith Vocational and Agricultural High School, Energy and Sustainability Commission, Financial Director, Mayor
- **Projected Annual Energy Savings:** 478 MMBTU
- **Estimated Project Capital and Operating Costs:** \$750,000

**ENERGY CONSERVATION TASK 4-D**

- **Task:** 200 kW or greater Photovoltaic Arrays at the Landfill
- **Timeline:** 2012 - 2015
- **Responsible Party(ies):** DPW, Energy and Sustainability Officer, Financial Director, Mayor
- **Projected Annual Energy Savings:** 833 MMBTU minimum
- **Estimated Project Capital and Operating Costs:** Commitment by City to purchase electricity produced by the array at a rate equivalent to or better than market rate of electricity.

*Total Projected Fossil Fuel Energy Reduction*

Table 7 provides a summation of energy conservation tasks 1 through 4.

**Table 7: Summation of Energy Conservation Tasks Reduction/Offset of Fossil Energy Use**

| Factors in Calculating Adjusted Baseline                                 |   | Energy Use by Energy Source                     |                      |                 |                |                 |                    | Total Current Energy Use (MMBTU) |                               |
|--|---|---|----------------------|-----------------|----------------|-----------------|--------------------|----------------------------------|-------------------------------|
|  |   | Electricity (kWh)                               | Natural Gas (therms) | Fuel Oil (Gal.) | Propane (Gal.) | Gasoline (Gal.) | Diesel Fuel (Gal.) |                                  |                               |
| <b>BASELINE ENERGY USE</b>   |   |   |                      |                 |                |                 |                    |                                  |                               |
| FY09 Municipal Energy Use  |   | 10,695,126                                      | 413,714              | 95,426          | 86,704         | 63,531          | 58,585             | 115,039                          |                               |
| Adjustment due to reduced energy use in baseline year at the James House |   | 86,021  |                      |                 |                |                 |                    | 294                              |                               |
| Adjustment due to geothermal vs. conventional HVAC system at Senior Cen. |   |   |                      |                 |                |                 |                    | 1,337                            |                               |
| <b>Adjusted Baseline</b>   |   |   |                      |                 |                |                 |                    | <b>116,669</b>                   |                               |
| <b>Energy Conservation Tasks</b>   |   | <b>Energy Reduction/Offset by Energy Source</b> |                      |                 |                |                 |                    | <b>Total Reduction (MMBTU)</b>   | <b>% of Adjusted Baseline</b> |
| <b>Task #</b>  | <b>Task Descriptor</b>                                    | Electricity (kWh)                               | Natural Gas (therms) | Fuel Oil (Gal.) | Propane (Gal.) | Gasoline (Gal.) | Diesel Fuel (Gal.) |                                  |                               |
| <b>1. City Facilities</b>  |   |   |                      |                 |                |                 |                    |                                  |                               |
| 1-A  | Guaranteed Energy Services Performance Project – Phase I  | 1,551,338                                       | 42,481               | 70,014          | 47,966         |                 |                    | 23,638                           | 20.26%                        |
| 1-B  | Guaranteed Energy Services Performance Project - Phase II |   |                      |                 |                |                 |                    | TBD                              |                               |
| 1-C  | Ground Source Heat Pump at Senior Center                  |   |                      |                 |                |                 |                    | 1,337                            | 1.15%                         |
| 1-D  | HVAC and Lighting Efficiency at James House               | 34,200  |                      | 4,300           |                |                 |                    | 714                              | 0.61%                         |
| 1-E  | Sustainable Practices for City Government                 |   |                      |                 |                |                 |                    | TBD                              |                               |

| Energy Conservation Tasks                       |   | Energy Reduction/Offset by Energy Source |                      |                 |                |                 |                    | Total Reduction (MMBTU) | % of Adjusted Baseline |
|---|---|--|----------------------|-----------------|----------------|-----------------|--------------------|-------------------------|------------------------|
| Task #  | Task Descriptor   | Electricity (kWh)                        | Natural Gas (therms) | Fuel Oil (Gal.) | Propane (Gal.) | Gasoline (Gal.) | Diesel Fuel (Gal.) |                         |                        |
| <b>2. Vehicles</b>                              |   |  |                      |                 |                |                 |                    |                         |                        |
| 2-A   | Upgrade to High Efficiency Vehicles                                 |  |                      |                 |                |                 |                    | TBD                     |                        |
| 2-B   | Upgrade Tracking of Fuel Use by Individual Vehicles                 |  |                      |                 |                |                 |                    | N/A                     |                        |
| 2-C   | Use a blend of biodiesel in all DPW diesel vehicles                 |  |                      |                 |                |                 | 3,050              | 424                     | 0.36%                  |
| <b>3. Street, Parking, and Traffic Lighting</b> |   |  |                      |                 |                |                 |                    |                         |                        |
| 3-A   | High Efficiency Light Fixtures at Parking Facilities: Phase I       | 94,870                                   |                      |                 |                |                 |                    | 324                     | 0.28%                  |
| 3-B   | High Efficiency Light Fixtures at Parking Facilities: Future Phases | 117,820                                  |                      |                 |                |                 |                    | 402                     | 0.34%                  |
| 3-C   | LED Streetlight Pilot Project                                       |  |                      |                 |                |                 |                    | TBD                     |                        |
| 3-D   | Streetlight Survey  |  |                      |                 |                |                 |                    | N/A                     |                        |
| 3-E   | Streetlight Efficiency Improvements                                 |  |                      |                 |                |                 |                    | TBD                     |                        |

| Energy Conservation Tasks   |   | Energy Reduction/Offset by Energy Source |                      |                 |                |                 |                    | Total Reduction (MMBTU) | % of Adjusted Baseline |
|---|---|--|----------------------|-----------------|----------------|-----------------|--------------------|-------------------------|------------------------|
| Task #  | Task Descriptor                                       | Electricity (kWh)                        | Natural Gas (therms) | Fuel Oil (Gal.) | Propane (Gal.) | Gasoline (Gal.) | Diesel Fuel (Gal.) |                         |                        |
| <b>4. Municipally-owned and -operated Clean Renewable or Alternative Energy Installations</b> |   |  |                      |                 |                |                 |                    |                         |                        |
| 4-A   | Landfill Gas to Energy <sup>2</sup>                   |  |                      |                 |                |                 |                    | N/A                     |                        |
| 4-B   | 13 kW Photovoltaic Array on the James House           | 13,114                                   |                      |                 |                |                 |                    | 45                      | 0.04%                  |
| 4-C   | 100 kW and 13 kW Photovoltaic Arrays at SVAHS and JSS | 139,960                                  |                      |                 |                |                 |                    | 478                     | 0.41%                  |
| 4-D   | 200 kW or greater Photovoltaic Arrays at the Landfill | 244,130                                  |                      |                 |                |                 |                    | 833                     | 1%                     |
| <b>Total Determinable Energy Reductions</b>   |   |  |                      |                 |                |                 |                    |                         |                        |
| Reductions from Energy Conservation Tasks 1 - 3   |   | 1,798,228                                | 42,481               | 74,314          | 47,966         |                 | 3,050              | <b>25,502</b>           | <b>21.86%</b>          |
| Reductions from Clean Renewable or Alternative Energy Installations                           |   | 397,204                                  |                      |                 |                |                 |                    | <b>1,355</b>            | <b>1.16%</b>           |
| <b>Total Determinable Energy Reductions</b>   |   | <b>2,195,432</b>                         | <b>42,481</b>        | <b>74,314</b>   | <b>47,966</b>  |                 | <b>3,050</b>       | <b>26,857</b>           | <b>23.02%</b>          |

<sup>2</sup> While, according to the US EPA, the greenhouse gas reductions from this measure are equivalent to not consuming 3,828,533 gallons of gasoline annually the City is not considering this equivalent to reducing energy use. However, it is notable that 3,828,533 gallons of gasoline has an energy content of 474,738 MMBTU, which is more than four times Northampton's adjusted baseline energy use.

## **MEASUREMENT AND VERIFICATION PLAN FOR PROJECTED REDUCTIONS**

Each energy conservation measure (ECM) included in the performance contract will be associated with a specific measurement and verification (M&V) protocol agreed to by the City of Northampton and ConEdison *Solutions* (CES). If deviations in performance occur, CES's M&V plan will identify in a written report those deviations and identify clearly the party responsible for correcting such deviations. Those deviations under the control and management of CES will be corrected as soon as they are identified (typically during CES's operation and maintenance (O&M) oversight activities, but sometimes only after completion of CES's annual M&V activities) and, if such deviations cannot be corrected, savings will be recalculated using the agreed-upon building simulation models to recalculate interactive energy savings for the building. Those deviations under the control of City of Northampton will be identified as soon as practicable and the City will take corrective actions recommended by CES.

Because the City has included the new Senior Center in the performance contract, monitoring the performance of this building's geothermal system will be included in this process. In addition, the performance contract project will increase the City's energy management systems capabilities, which the City will use to monitor energy performance on a daily or weekly basis. For facilities not included in the energy services performance contract, the City will continue to monitor energy performance through its ongoing in-house energy tracking efforts. The City anticipates moving over to the MA DOER's MassEnergyInsight on-line tracking system as a way to upgrade the City's current level of energy tracking reporting.

Central Services will oversee all energy tracking responsibilities and will work closely with CES to implement the performance contract's O&M and M&V plans. Central Services will provide at a minimum an annual report on the performance of the energy services project for the Mayor of Northampton and the City Council.

Northampton will upgrade its capability to track gasoline and diesel fuel use and miles driven per vehicle so the City can track individual vehicle's fuel efficiency (miles per gallon).

Increased efficiency in outdoor lighting and energy produced by renewable energy projects will be verified by monitoring electric utility bills and on-line data monitoring systems respectively.

## **LONG-TERM ENERGY REDUCTION GOALS – BEYOND 5 YEARS**

The Sustainable Northampton Plan sets a short term goal of 30% greenhouse gas (GHG) emission reduction by 2030. The Pioneer Valley Clean Energy Plan, which has been endorsed by the City, sets a goal of 80% GHG reductions over 2000 levels by 2050.

### **Municipal Sector**

Northampton will continue to make comprehensive efficiency improvements in all City facilities as new technologies become available and/or energy prices make feasible. The City will evaluate at regular intervals whether technology and/or energy prices have changed enough to warrant the City undergoing another energy services performance project. In addition, the City will continue to seek funding and financing opportunities that will allow it to install renewable energy systems at City facilities.

The City will continue to encourage National Grid to provide a rate-tariff for high-efficiency LED streetlights and upgrade all of Northampton's streetlights to this new technology as soon as the technology and cost make this feasible. Results from any LED streetlight pilot project will be shared with National Grid to encourage them to bring this option to their customers.

### **Residential and Commercial Sectors**

In short, the City's long-term strategy to assist private property owners is to reduce barriers to increased efficiency in the residential and commercial sectors. The City can do this through policies and partnerships that provide funding, financing, and education and reduce uncertainties for private property owners to increase efficiency and use renewable energy. Some specific programs include:

- Property Assessed Clean Energy (PACE) financing
- Partnering with banks to provide:
  - energy efficiency loans
  - a deferred energy efficiency loan program for low income residents
- Work with regional partners to develop a regional carbon-offset program
- Establish seed money for a local revolving loan fund for energy efficiency and renewable energy projects
- Partner with the Chamber of Commerce to provide green business practices assistance to local businesses
- Work with SVAHS and other local educational organizations to prepare our workforce for jobs in energy efficiency and renewable energy

**CITY OF NORTHAMPTON**

MASSACHUSETTS

May 6, 2010

*In City Council,*

Upon the recommendation of the Councilor David J. Narkewicz, Councilor Pamela C. Schwartz and the Energy and Sustainability Commission

*Ordered, that*

WHEREAS, the *Sustainable Northampton Comprehensive Plan* (2008) includes reducing energy demand and emissions of greenhouse gases as goals; and

WHEREAS, On April 15, 2010 City Council authorized bonding for an Energy Services Performance Contract to invest in energy efficiencies that will reduce total city building energy use by over 20%.

NOW, THEREFORE BE IT ORDERED

City Council approves the Northampton Energy Reduction Action Plan which describes how to reduce municipal energy use by 20% or more within five years, primarily through the Energy Services Performance Contract.

In City Council, May 6, 2010  
Rules suspended, passed two readings and enrolled.

Attest: Mary L. Medina Clerk of Council

Approved: Mary Clare Higgins, Mayor

A true copy.

Attest: Mary L. Medina Clerk of Council

**DRAFT**

MINUTES FOR THE MEETING OF THE  
NORTHAMPTON SCHOOL COMMITTEE

April 28, 2010

**General Session:** 7:00 pm in the Community Room of J.F.K. Middle School – Massachusetts General Law – Open Meeting Law Chapter 39, Sec. 23B (3).

A **Motion** was made, and **seconded**, to go into the regular session of the School Committee Meeting. The motion carried at 7:08pm.

**Roll Call:**

Mayor Higgins called the meeting to order and a roll call was taken at 7:15pm, to open the regular session of the School Committee meeting.

**Present:** Members present were Mayor Mary Clare Higgins, Mr. Flynn, Mr. Young, Mr. Bourne, Ms. Pick, Mr. Fisher, Mr. Meyer and Dr. Glading-DiLorenzo

**Absent:** Mr. Ed Zuchowski and Ms. Minnick

**Also Present:** Superintendent, Dr. Rodriguez and Business Manager, Ms. Susan Wright.

**Public Session:**

The following people addressed the School Committee:

Jeffrey Bubar – Concerns about change of start/dismissal times and the impact on the aquatic center.

Jack Petrides – Spoke about HS start time and provided information from a school in MN that has successfully changed to 830am-3:10pm.

Andrea James – Discussed the proposal for a cut to the World Language program for the 6<sup>th</sup> grade for 2011.

Kay Saakvitne – Discussed school start times. Disagrees with waiting a year and wants the administration to take action now.

Julie Asbornsen – Discussed budget cut proposal to eliminate teachers. Made a recommendation to the School Committee to reject that option.

Laine Romen-Alsten – Discussed the District School Council and wants to open dialogue with the School Committee.

Jim Harrity – Discussed the NPS report card with regard to performance rates and cracks in the structure of the district. Promoted a community based approach to the budget.

Mayor Higgins thanked the public for their comments.

**ANNOUNCEMENTS:**

There were no announcements.

**RECOMMENDED ACTIONS:**

There were no recommended actions.

**REPORTS AND RECOMMENDATIONS:**

**REPORT: School Start Times**

Taken out of order, Mayor Higgins asked that Nancy Athas come to the podium to discuss school start times. Dr. Rodriguez took a moment to review her memo to the School Committee with her recommendations which included taking the 2010/2011 school year to perform surveys of student body, parents and staff to determine whether they are in favor of changing hours, how the change will affect them and whether or not they will need assistance coming to school if buses are eliminated; hold forums to inform parents and the community of the possible change to ensure that all affected groups will be notified; brainstorm for ways to assist families who may have difficulty with this change in the event that it is decided to change school start times and provide a timeline to the community.

Dr. Rodriguez asked Ms. Wright to provide a recap of the options. (see handout)

Ms. Wright provided one more option which had not yet been presented.

- Eliminate High School Transportation only.
- Continue K-8 transportation.
- Keep Elementary and Middle School start times the same
- Change High School start time

It is important to note that SPED transportation will still need to be provided for 27 students and the district will lose the ability to tier this. This option could present a potential savings of \$18,820. There was a discussion about the Capitol Plan request for the wheelchair bus to assist.

Mayor Higgins recognized Principal Nancy Athas. Ms. Athas spoke about the survey from last year. The results were 50/50 in favor of the change to school start times. She does not feel comfortable to begin this for 2010, she would like to take the 2010 school year to be sure we have fully informed all families who will be affected by this change, and hear from all groups, parents, students who work in the afternoon, or provide daycare, and/or students who would have difficulty attending if we were to eliminate the bus. The Mayor asked whether Holyoke Public Schools changed their time, and Ms. Athas confirmed they did. Mayor Higgins asked for clarification as to how Holyoke involved the PVTA, and Ms. Athas explained that the Holyoke Public Schools paid the PVTA for the transportation of the students and also explained that in Holyoke there is a more extensive bus route allowing for the pick up of these students. We do not have this in Northampton, and it would be an additional cost for Northampton.

There was a discussion about providing something that is educationally sound with the change in school start times and the timing of the decision. Mayor Higgins recapped the Superintendent's recommendations to fully survey and report back to the School Committee by December 2010. Ms. Athas asked for support to form a committee to ensure that kids can get to school if the time change moves forward. Mr. Downey suggested moving to report back to October to provide enough time to prepare. Mayor Higgins thanked Ms. Athas for her time in addressing the School Committee.

Mr. Zuchowski arrived at 7:45pm.

**VOTE:** SPED Director Hiring

Dr. Rodriguez presented her recommendation of Nathan Ziegler to the appointment of Director of Special Education and asked the School Committee for a VOTE. She thanked Mr. Ziegler for his hard work with the Coordinated Program Review as acting Director without the title. His leadership has been impressive and he has built a solid foundation within the Northampton Public Schools for the last four years.

Ms. Pick made a **Motion, seconded** by Mr. Meyer to appoint Nathan Ziegler to the position of Director of Special Education.

Mr. Young reported back as the liaison to the SPED PAC. They expressed reservations around the process and abstained from the recommendation for hire. There was a discussion surrounding the process and the Superintendent's meeting with the PAC. Mayor Higgins re-focused the discussion on the appointment and asked everyone to weigh in. Mr. Meyer, Ms. Pick, Mr. Young, Mr. Zuchowski, Mayor Higgins, Mr. Fisher and Dr. Glading-DiLorenzo voiced their support of the recommendation.

A **VOTE** was taken and the Motion **passed unanimously**.

Mr. Ziegler thanked the members of the Parent Advisory Council, Administrators and the School Committee for their support. He is looking forward to working with the team.

Mayor Higgins left the meeting at 8:30pm. Ms. Pick assumed the duties of chairing the remainder of the meeting.

The Committee adjourned for 5 minutes to set up the PowerPoint presentation.

**REPORT:** FY11 Budget Presentation

Ms. Pick welcomed everyone back. She introduced Dr. Rodriguez to present the budget. Dr. Rodriguez discussed the theme: "Taking the road toward improved student achievement." She and Ms. Wright provided a detailed report on the process, district achievements, line item break-out and summary. (Please see the Executive Summary, the FY11 Draft Budget and Budget PowerPoint documents for detailed information.) Dr. Rodriguez reviewed class sizes for elementary, middle and high. Ms. Pick opened the floor for questions from the School Committee. There were discussions surrounding the use of the FLC building, affects on people and programming, charter schools/School Choice, FY10 surplus and variables, affect of staff loss on administration, class sizes and reconfiguration of schools/models. Ms. Pick summarized the Budget and Property discussion where this information was first presented. There was a correction made to the Budget Cut Handout for the teacher count. (See attached Budget presentation and Executive summary.)

The next School Committee meeting is scheduled for May 13<sup>th</sup> with Budget and Property on May 6<sup>th</sup>. Ms. Pick encouraged School Committee attendance.

**NEW BUSINESS:**

Mr. Meyer presented the Resolution related to the Green Communities Program to the Committee. The previous Minutes did not properly reflect how the School Committee voted the resolution. Mr. Meyer read how he would like the Minutes reflected in order to move forward with potentially becoming eligible for securing grant funds. He recommended the attached Resolution to be voted on. (see attachment)

Mr. Meyer made a **Motion, seconded** by Mr. Flynn to accept the Resolution presented to approve the Fuel Efficient Fleet Strategy. A **VOTE** was taken and the Motion **passed unanimously**.

**VOTE:** Rules and Policy Referral

Mr. Bourne made a **Motion** to refer to Rules and Policy a discussion on contracts for non-represented Administrators. Mr. Young **seconded**. A **VOTE** was taken and the Motion **passed unanimously**.

Dr. Rodriguez asked the School Committee for approval to arrive late to the June 10<sup>th</sup> School Committee meeting in order to attend her daughter's 8<sup>th</sup> grade graduation. The Committee approved the request.

Ms. Pick addressed the District School Council and the email correspondence that was sent to the School Committee members. Following legal opinion and a discussion with the Mayor and the Superintendent, Ms. Pick applauded the group to help uplift the School Committee and help the district. Dr. Rodriguez has been asked to open dialogue with the principals to move forward with communication between the schools, School Committee and Administration. She proposed the idea of having two members of each School Council be appointed to meet with the Vice-Chair and the Superintendent for regular communication moving forward.

Mr. Meyer made a **Motion** to adjourn, **seconded** by Mr. Flynn. The Committee **VOTED** unanimously to adjourn at 10:45 p.m.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Isabelina Rodriguez", with a stylized flourish at the end.

Isabelina Rodriguez, Ed.D.  
Superintendent

# NORTHAMPTON PUBLIC SCHOOLS

212 Main Street Room 200 Northampton, MA 01060-3112

Telephone (413) 587-1331

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## SCHOOL COMMITTEE

Honorable Mary Clare Higgins, Mayor  
Alden Bourne  
Timothy Fisher  
Michael Flynn  
Lise Glading-DiLorenzo, M.D.  
Downey Meyer  
Lisa L. Minnick  
Stephanie Pick  
James Young  
Edward Zuchowski

ISABELINA RODRIGUEZ Ed.D.  
SUPERINTENDENT

SUSAN WRIGHT  
BUSINESS MANAGER

## Proposed April 28, 2010 Resolution Northampton School Committee

*{Note: The requested resolution is to make clear the School Committee support for these measures, which makes the City eligible to be certified by the state as a Green Community and makes Northampton available for grant funds to further reduce our energy/carbon footprint.}*

WHEREAS, the ***Sustainable Northampton Comprehensive Plan*** (2008), drafted with the participation of a Northampton School Department and a Northampton School Committee representative, includes reducing energy demand and emissions of greenhouse gases as goals; and

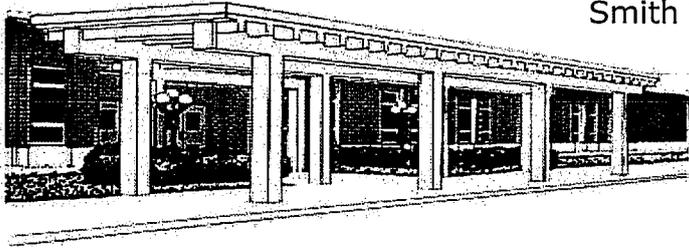
WHEREAS, On March 11, 2010, the Northampton School Committee approved a fuel efficient fleet strategy, which was later approved by Northampton City Council with the requested change to clearly exempt school buses; and

WHEREAS, the Northampton School Committee and its Budget and Property Subcommittee have discussed the capital improvements to school (and non-school) buildings that will occur from the Energy Services Performance Contract that the Northampton City Council agreed to bond on April 15, 2010 and will reduce total city building energy use by 20% or more within five years; and

WHEREAS, The Northampton Energy Reduction Action Plan is the vehicle by which the city is planning energy use reduction from municipal and school buildings and which will primarily be achieved through the Energy Services Performance Contract; now, therefore, be it

RESOLVED, that the Northampton School Committee approves the Northampton Energy Reduction Action Plan which describes how to reduce municipal and school energy use by 20% or more within five years, primarily through the Energy Services Performance Contract.

RESOLVED, that the Northampton School Committee approves the Fuel Efficient Fleet Strategy previously discussed and approved.



Smith Vocational and Agricultural High School  
80 Locust Street  
Northampton, MA 01060-2094

Arthur P. Apostolou  
Superintendent/Director



New England  
Association of  
Schools and Colleges  
associate member

Telephone (413) 587-1414  
Fax (413) 587-1405

May 4, 2010

Cliff Sullivan  
Department of Energy Resources  
Green Communities Division  
100 Cambridge Street, 10<sup>th</sup> Floor  
Boston, MA 02114

Dear Mr. Sullivan:

The Smith Vocational Agriculture High School Trustees and Administration is working on improving the energy efficiency of our school and reducing our energy footprint. We are pleased to be joining a larger city effort to reduce all municipal energy use.

I want to note two efforts we have undertaken in support of the City's application for Green Communities designation:

First, our Trustees adopted and approved the Fuel Efficient Fleet Strategy that was also adopted by the Northampton School Committee and the City Council (that policy is attached to the City's application for Green Communities designation).

Second, we are committed to the actions in the Northampton Energy Reduction Action Plan which describes how to reduce municipal and school energy use by over 20% or more within five years, primarily through the Energy Services Performance Contract. On April 15, 2010, City Council agreed to bond for the Energy Services Performance Contract, which will substantially complete the items in the Energy Reduction Action Plan identified for Smith Vocational School.

We look forward to working with Northampton as a Green Community.

Sincerely,

Arthur Apostolou, Superintendent  
Smith Vocational Agricultural School

## CRITERIA 4: FUEL EFFICIENT VEHICLES

### Description of Criteria

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

### Documentation

Please provide the following documentation to verify that the municipality has met this criterion **(both required)**:

- A copy of the policy or other mechanism adopted for purchasing only fuel efficient vehicles
- Inventory of existing fleet (model, year, estimated mpg) with plans for replacements with fuel efficient vehicles

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**City Council Policy/Resolution and inventory of City non-exempt vehicles with plan for replacement are attached on the following pages**

**See Criteria 3 minutes from Northampton School Committee verifying committee resolution of approval of the City's fuel efficient vehicle purchasing policy**

**See Criteria 3 for a letter of confirmation that the Smith Vocational and Agricultural High School Board of Trustees adopted the City's fuel efficient vehicle purchasing policy**

AMENDED APRIL 8, 2010

**CITY OF NORTHAMPTON**

MASSACHUSETTS

February 4, 2010

*In City Council,*

Upon the recommendation of the Councilor David J. Narkewicz, Councilor Pamela C. Schwartz and the Energy and Sustainability Commission

*Ordered, that*

WHEREAS, the *Sustainable Northampton Comprehensive Plan* (2008) includes reducing energy demand and emissions of greenhouse gases as goals; and

WHEREAS, improving the energy efficiency of city-owned motor vehicles will reduce fuel consumption and energy costs, reduce total lifetime costs of vehicle ownership, and reduce greenhouse gas emissions; and

WHEREAS, the most recently published US Environmental Protection Agency data define fuel efficient vehicles as having a combined city and highway MPG no less than:

|                                |                       |                       |
|--------------------------------|-----------------------|-----------------------|
| <b>Car:</b>                    | 2 wheel drive: 29 MPG | 4 wheel: 24 MPG       |
| <b>Small pick-up truck:</b>    | 2 wheel drive: 20 MPG | 4 wheel drive: 18 MPG |
| <b>Standard pick-up truck:</b> | 2 wheel drive: 17 MPG | 4 wheel drive: 16 MPG |

NOW, THEREFORE BE IT ORDERED

In consultation with the School Committee and the Trustees of Smith Vocational Agricultural High School, City Council adopts a policy that all City of Northampton divisions and departments, including all schools, purchase only fuel efficient vehicles for municipal and school use whenever such vehicles are commercially available and practicable, provided however that the following vehicles shall be exempt:

- Heavy-duty vehicles such as fire-trucks, ambulances, school buses and public works trucks
- Police cruisers, provided however that police cruisers will no longer be exempt when fuel efficient cruisers become commercially available.

And that all divisions and departments, including all schools, maintain an annual vehicle inventory for non-exempt vehicles and develop a plan and process for replacing these vehicles with vehicles that meet the fuel efficiency ratings below, including goals for when the existing fleet will be replaced, and annually review said plan.

This policy is enforced by the Mayor, Northampton Schools Superintendent, and Smith Vocational Agriculture School Superintendent, or their designees.

In City Council, April 15, 2010  
Rules suspended, passed two readings and enrolled.

Attest: Mary L. Medina Clerk of Council

Approved: Mary Clare Higgins, Mayor

A true copy.

Attest: Mary L. Medina Clerk of Council

## Northampton Vehicle Inventory, April 14, 2010

Northampton owns and operates 38 vehicles that qualify as “non-exempt” under the DOER’s Green Community Criteria 4.

| Department       | Qty | Year | Make       | Model                   | Drive | MPG |
|------------------|-----|------|------------|-------------------------|-------|-----|
| Bd. Of Health    | 1   | 1999 | Ford       | Crown Victoria          | 2WD   | 16  |
| Central Services | 1   | 2000 | Ford       | Crown Victoria          | 2WD   | 16  |
| Central Services | 1   | 1991 | Chevrolet  | Astro Van               | 2WD   | 17  |
| Central Services | 1   | 1996 | Ford       | Escort                  | 2WD   | 25  |
| Central Services | 1   | 2003 | Ford       | Winstar                 | 2WD   | 18  |
| Central Services | 1   | 1988 | GMC        | Vandura                 | 2WD   | 16  |
| Council on Aging | 1   | 1999 | Dodge      | Caravan                 | 2WD   | 16  |
| DPW              | 1   | 1998 | Ford       | Econoline Van           | 2WD   | 13  |
| DPW              | 2   | 2007 | Ford       | Escape Utility - Hybrid | 4WD   | 27  |
| DPW              | 1   | 2000 | Ford       | Explorer                | 4WD   | 16  |
| DPW              | 1   | 2002 | Ford       | Explorer                | 4WD   | 15  |
| DPW              | 1   | 2000 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 1   | 2001 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 3   | 2002 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 1   | 2003 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 1   | 2004 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 2   | 2007 | Ford       | Ranger                  | 2WD   | 17  |
| DPW              | 1   | 2008 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 1   | 2009 | Ford       | Ranger                  | 4WD   | 15  |
| DPW              | 1   | 1997 | Ford       | Taurus                  | 2WD   | 21  |
| DPW              | 1   | 2004 | Ford       | Taurus                  | 2WD   | 20  |
| Fire             | 1   | 2008 | Ford       | Escape Utility          | 4WD   | 19  |
| K-12 School      | 1   | 1991 | Ford       | Econline Van            | 2WD   | 13  |
| K-12 School      | 1   | 2004 | Ford       | Crown Victoria          | 2WD   | 16  |
| K-12 School      | 1   | 2001 | Ford       | Crown Victoria          | 2WD   | 16  |
| Parking          | 1   | 2006 | Chevrolet  | Silverado               | 4WD   | 15  |
| Parking          | 1   | 2003 | GMC        | Sierra                  | 4WD   | 14  |
| Parking          | 2   | 2005 | Kia        | Rio                     | 2WD   | 24  |
| Parking          | 1   | 2000 | Ford       | Ranger                  | 2WD   | 16  |
| SVAHS            | 1   | 1989 | Chevrolet  | Astro Van               | 2WD   | 17  |
| SVAHS            | 1   | 1999 | Ford       | Explorer                | 4WD   | 15  |
| SVAHS            | 1   | 2001 | Ford       | F250                    | 4WD   | 14  |
| SVAHS            | 1   | 1993 | Oldsmobile | Cutlas                  | 2WD   | 21  |

### Vehicle Replacement Plan

The City of Northampton, Northampton School District, and Smith Vocational and Agricultural High School will identify vehicles to be replaced through their respective capital improvement planning process and ensure that their proposed replacements are in compliance with the Northampton’s Fuel Efficient Vehicle Purchasing Policy.

## CRITERIA 5: MINIMIZE LIFE CYCLE COSTS

### Description of Criteria

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.

### Type of Method

Please indicate which type of life cycle cost reduction the municipality is providing (**check applicable box**).

Local Process

Adopted Stretch Energy Code (780 CMR 120.AA, the MA Board of Building Regulations and Standards (BBRS) Stretch Energy Code)

### Documentation

Please provide the following documentation to verify that the municipality has met this criterion:

#### Local Process

The municipality must provide documentation of the standard adopted, the mechanism in place for requiring this criterion for new construction and documentation of how this standard provides reduced life-cycle energy costs.

NOTE: If a Municipality plans to meet this criterion through a local process, they are encouraged to submit a description of how it plans to do so with supporting documentation in advance of applying for designation. In this manner, the Green Communities can provide feedback on the acceptability of the identified process for meeting this criteria.

#### Stretch Energy Code

The municipality must provide documentation of the city or town vote adopting 780 CMR 120.AA, MA Board of Building Regulations and Standards (BBRS) Stretch Energy Code.

**\*NOTE: TOWNS THAT HAVE PLACED AN ARTICLE ON THEIR TOWN MEETING WARRANT (PROVIDED THE TOWN MEETING VOTE IS NO LATER THAN THURSDAY, MAY 14, 2010) CAN SUBMIT A DESIGNATION FORM, INDICATING THAT CRITERION #5 IS IN PROCESS. IF**

**THIS APPLIES PLEASE CHECK OFF THE BOX BELOW AND INDICATE WHEN THE TOWN MEETING VOTE WILL OCCUR AND INCLUDE A COPY OF THE APPLICABLE TOWN MEETING WARRANT. TOWN MEETING MUST APPROVE THE STRETCH CODE ARTICLE FOR THE APPLICANT TO RECEIVE CREDIT FOR MEETING CRITERION #5.**

TOWN MEETING VOTE PENDING

Town Meeting Date: \_\_\_\_\_

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**Northampton City Council Resolution adopting 780 CMR 120.AA, MA Board of Building Regulations and Standards (BBRS) Stretch Energy Code (1<sup>st</sup> reading on 4/8/2010 and 2<sup>nd</sup> reading on 4/15/2010) is attached on the following page.**

Refer to Energy and Sustainability Commission

**CITY OF NORTHAMPTON**  
MASSACHUSETTS

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*In City Council,* ..... February 4, 2010.....

Upon the recommendation of the Councilor David J. Narkewicz, Councilor Pamela C. Schwartz and  
the Energy and Sustainability Commission.....

*Ordered, that*

WHEREAS, the *Sustainable Northampton Comprehensive Plan* (2008) includes reducing energy demand and emissions of greenhouse gases as goals and recommends stricter minimum energy standards for the building code; and

WHEREAS, improving the energy efficiency of buildings will reduce total lifetime costs to property owners and tenants, reduce greenhouse gas emissions, and increase the amount of economic activity that is retained within our local economy; and

WHEREAS, Municipalities have a local option to adopt a portion of the building code with more stringent energy efficiency standards that lower the total lifetime cost of building ownership and operation ("Stretch Code"); and

WHEREAS, final action on this order will come only after the Northampton Energy and Sustainability Commission holds a public information meeting and City Council holds a public hearing on the "Stretch Code";

NOW, THEREFORE BE IT ORDERED

City Council hereby adopts Appendix 120.AA of the Massachusetts Board of Building Regulations and Standards also known as the Stretch Energy Code, for the City of Northampton.

In City Council, April 8, 2010  
Passed First Reading on a Roll Call Vote of 6 Yes, 2 No,  
(Councilors Plassmann and Tacy), 1 Abstention (Councilor LaBarge)

Attest: Mary J. Medina Clerk of Council

In City Council, April 15, 2010  
Passed Second Reading on a Roll Call Vote of 6 Yes, 2 No  
(Councilors LaBarge and Tacy), 1 Absent (Councilor Plassmann)

Attest: Mary J. Medina Clerk of Council

Approved: Mary Clare Higgins, Mayor  
Rules suspended, passed two readings and enrolled.  
I hereby certify that the above order passed the Northampton City Council  
On April 15, 2010.

Her Honor Mayor Mary Clare Higgins approved the order on April 15, 2010.

Attest: Mary J. Medina Clerk of Council

# REQUEST FOR WAIVER

Pursuant to MGL c. 25A, Section 10(c), the Secretary of Energy and Environmental Affairs may waive these requirements based on a written finding that due to unusual circumstances, a municipality cannot reasonably meet all of the requirements and the municipality has committed to alternative measures that advance the purposes of the green communities program as effectively as adherence to the requirements.

Please select the criteria that the municipality is requesting a waiver for. A letter justifying why the applicant cannot meet this criteria (with supporting documentation) must be attached. In the letter please provide an alternative measure that advances the purposes of the Green Communities program as effectively as adherence to the requirement.

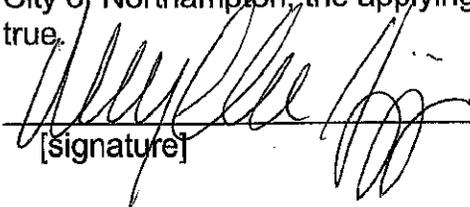
- |   |  |
|---|--|
| <input type="checkbox"/> As of Right Zoning       | <input type="checkbox"/> Expedited Permitting    |
| <input type="checkbox"/> Energy Baseline          | <input type="checkbox"/> Fuel Efficient Vehicles |
| <input type="checkbox"/> Minimize Life Cycle Cost |  |

## CERTIFICATION OF APPLICATION

Pursuant to MGL c25A Sections 2 and 10, the applicant is required to certify that they are authorized to execute the application and verify that all information submitted is true.

### RESOLUTION OF AUTHORIZATION

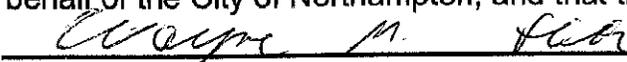
Resolved that, Mary Clare Higgins, is authorized to execute said Application on the behalf of the City of Northampton, the applying community and verify that the information in this application is true.

  
 \_\_\_\_\_  
 [signature]

\_\_\_\_\_  
 4/12/10  
 [date]

\_\_\_\_\_  
 Mayor of the City of Northampton  
 [title]

I, Wayne M. Feiden, as a notary public, certify that I witnessed the signature of the above named Mary Clare Higgins, and that said person stated that she is authorized to execute this resolution on behalf of the City of Northampton, and that the individual verified her identity to me, on this date:

  
 \_\_\_\_\_  
 [Signature]

\_\_\_\_\_  
 4/12/2010  
 [date]

My commission expires on: October 14, 2016 NOTARY SEAL HERE:

