



Town Of Rye

## 2011 Municipal Energy Report

Compiled by  
*Michele Sopher, Rye Energy Committee*  
May 17, 2012



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In April 2011 and 2012, the Rye Board of Selectmen renewed the charge of the Rye Energy Committee (REC), originally formed in 2007. Following are some of the REC's responsibilities which are relevant to this report:

1. *To assess current energy use by Town of Rye municipal activities based on currently available information provided by Town staff.*
2. *To evaluate energy conservation and air emission reduction practices recommended by utilities and Federal agencies, and in use by other municipalities, which may be applicable to the Town of Rye operations.*

*And, at the completion of its mission, the Rye Energy Committee will provide a brief report with recommendations.*

This report represents an inventory and analysis of the energy use and greenhouse gas emissions of the municipal sector of Rye for the year 2011. The purpose of this report is to assess current energy use, assist in prioritizing energy-saving projects, and to track energy reduction progress. This report does not address residential, commercial, or industrial energy use.

### **Energy Inventory and Analysis Background**

The inventory is based on data gathered by the REC with the assistance of municipal staff. Data came from monthly electricity bills from Public Service of New Hampshire (PSNH), from each building's heating fuel deliveries, and from the vehicle fuel use of the municipal fleets. This data was analyzed using three software and online tools, as below.

| Software/Online Tool                        | Developed by                                   | Results                                                                                                                |
|---------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Small Town Carbon Calculator (STOCC)</b> | Clean Air-Cool Planet & Univ. of New Hampshire | Overall energy use, costs, and greenhouse gas emissions for buildings, vehicles, and streetlights for one year (2011)  |
| <b>Portfolio Manager</b>                    | EPA                                            | Detailed building energy analysis useful for evaluating energy performance and comparing buildings over multiple years |
| <b>Excel</b>                                | Microsoft                                      | Other trend graphs and pie charts                                                                                      |

### **Rye Budget Centers**

A municipal overview and a community profile of Rye are given in Appendix A. The town of Rye has six separate and/or overlapping budget centers. There are three tax precincts: the Rye Water Precinct, Rye Beach Village Precinct, and the Jenness Beach Precinct. These tax precincts pay the same base tax rate for shared town services with a precinct-specific tax added on. The remaining three budgets include the Rye School District, the Water District, and the Sewer District. The Rye School District is funded through a portion of the base tax rate paid by the precincts. The Water District is completely self-supported through customer charges based on usage. The Sewer District is also supported through customer charges, but does receive some support from the town.

In order to make this report more useful to the various budget managers in town, two iterations of the STOCC software were run. The main body of this report is concerned with the overall municipal sector as detailed in Table 1. The second iteration, in Appendix B, shows the overall energy use results for the portion of town overseen by the Selectmen. The overall energy analysis for the entire municipal sector is important in that the precincts and districts may benefit from working together should they decide to move forward on energy efficiency or conservation projects.

The REC wishes to express their appreciation to all town staff and commissioners who provided the data for this report, shown in right-most column of Table 1. We are also grateful for the support of Town Administrator Mike Magnant, who smoothed the way when necessary.

Table 1 outlines the districts and buildings covered by this report, the type of energy used, and the board or commission responsible for each area.

**Table 1: Rye Precincts and Districts and the Type of Energy Used**

| District or Building                | Type of Energy Used                                                                                                  | Overseen by                      | Data From                                                                                                               |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Rye Water Precinct                  | 8 buildings* using electricity and heating oil or propane; gasoline and diesel vehicles; area lights; 9 streetlights | Board of Selectmen               | Cindy Gillespie (electricity, fuel use); Dennis McCarthy (vehicles, outdoor lights); Andy Richmond (Rye Public Library) |
| Rye Beach Village Precinct          | Electricity and heating oil for Precinct Office, 3 streetlights, 68 post lights lining streets                       | Rye Beach Village District Board | Tyson Dines, treasurer                                                                                                  |
| Jenness Beach Precinct              | 69 streetlights                                                                                                      | Jenness Beach District Board     | Randy Crapo                                                                                                             |
| Water District                      | Electricity and propane for office, 3 gasoline trucks, electricity for area lights and pumping water                 | Water District Commission        | Ralph Hickson                                                                                                           |
| Sewer District                      | Propane for pump houses, electricity for pumping                                                                     | Sewer Commission                 | Lee Arthur                                                                                                              |
| Rye Elementary and Jr. High Schools | Electricity, heating oil, and propane                                                                                | Rye School Board/SAU50           | Jim Katkin, Business Administrator                                                                                      |

\*The eight buildings in the Rye Water Precinct included in this report are the Town Hall, the Public Safety Building, the Public Works Garage, the Recycling Center, the Swap Shop, the Recreation Complex, the Soccer Snack Shack, and the Rye Public Library.

## Rye Overall Energy Use

The STOCC calculator provides an overall energy snapshot for one year, in this case the calendar year 2011. It divides Rye's energy use, cost and carbon emissions into three main municipal sectors: Buildings, Vehicles, and Streetlights. Each of these sectors uses energy as follows:

- **Buildings (and Operations)**
  - Electricity use
  - Heating fuel use, oil and/or propane
  - Electricity for Water District and Sewer District pumping
- **Vehicles**
  - Gasoline for cars and trucks
  - Diesel for cars and trucks
- **Streetlights (and other outdoor lights) – Electricity for**
  - Streetlights
  - Area lights
  - Parking lot lights
  - Pedestrian flashers at crosswalks

All kilowatt-hours of electricity and gallons of oil, propane, gasoline, and diesel were converted to a common unit of energy, MMBtu (million British Thermal Units), for direct comparison.

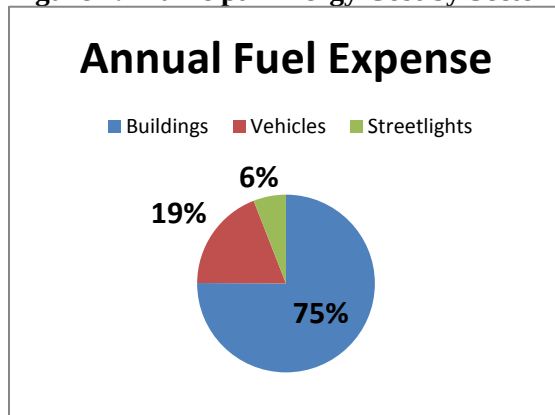
Table 2 shows the overall energy cost, energy use, and greenhouse gas emissions for the entire municipal sector of Rye. During 2011, Rye spent \$424,273 on 15,029 MMBtu of energy and emitted 2,711,853 pounds of carbon dioxide, the major greenhouse gas.

**Table 2: 2011 Energy Use, Cost, and Carbon Emissions, by Municipal Sector**

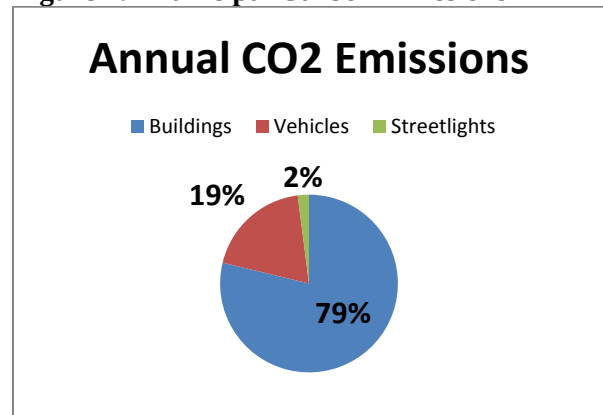
| Summary Report             |           |            |          |            |              |            |             |
|----------------------------|-----------|------------|----------|------------|--------------|------------|-------------|
|                            | Buildings |            | Vehicles |            | Streetlights |            |             |
|                            | #         | % of total | #        | % of total | #            | % of total | Grand Total |
| Annual Fuel Expense        | \$319,774 | 75%        | \$79,849 | 19%        | \$24,650     | 6%         | \$424,273   |
| Annual CO2 Emissions (lbs) | 2138720   | 79%        | 518881   | 19%        | 54252        | 2%         | 2711853     |
| Annual Energy Use (MMBtu)  | 11556.9   | 77%        | 3272.5   | 22%        | 199.5        | 1%         | 15028.9     |

Figures 1 through 3 show the classification by sector for 2011.

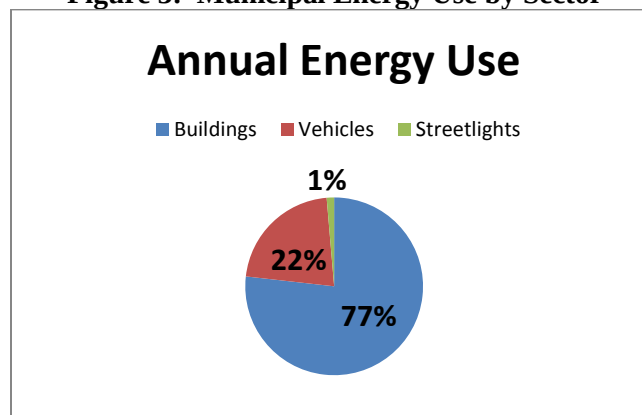
**Figure 1: Municipal Energy Cost by Sector**



**Figure 2: Municipal Carbon Emissions**



**Figure 3: Municipal Energy Use by Sector**

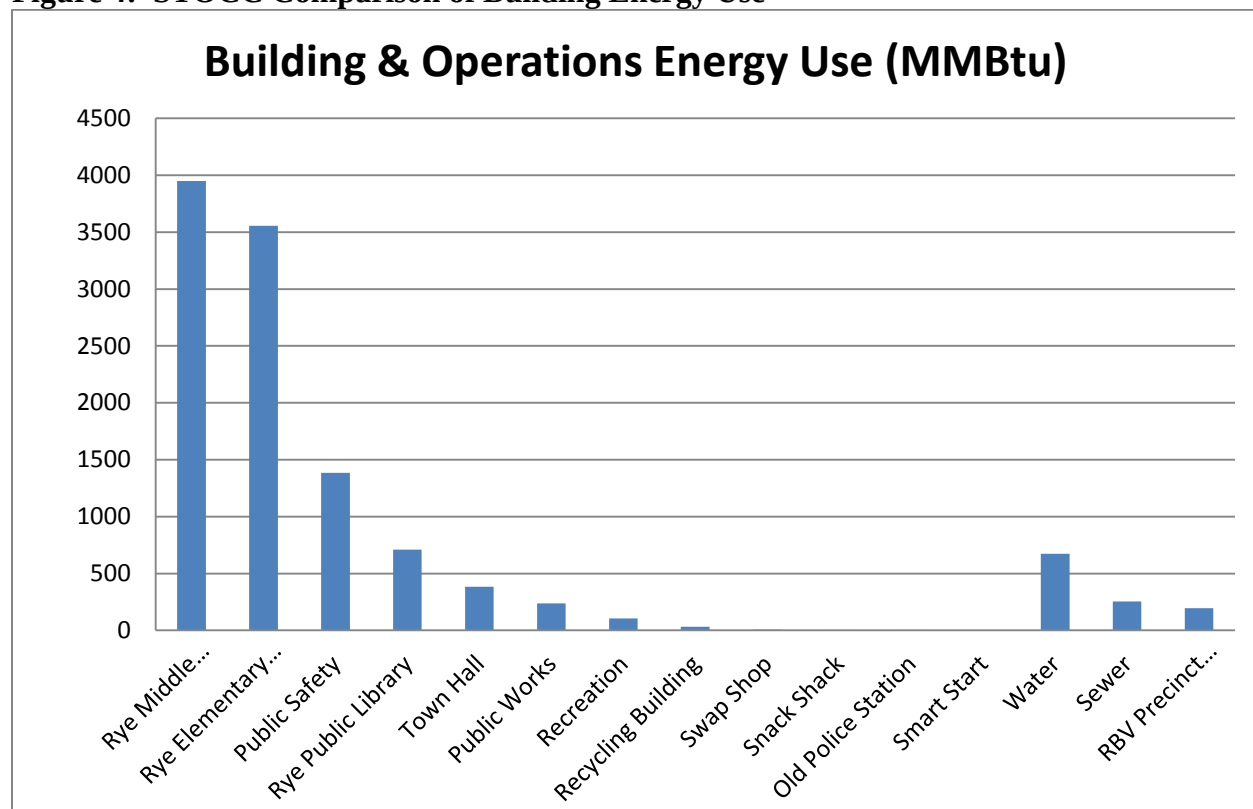


## **Buildings and Operations**

The above Figures show that by a large margin, the buildings in Rye account for the greatest energy use, cost, and carbon emissions. For this reason, the highest priority should be placed on making Rye's buildings more energy efficient. Figure 4 compares the energy use of the Rye municipal buildings and operations using the STOCC calculator.

Rye Junior High School and Rye Elementary School, the largest buildings in town, dominate the chart in Fig. 4. Because they account for the largest total energy usage and cost, the schools should be top priority for intensive energy efficiency work. In 2011 approximately \$280 per student for Rye Elementary and \$430 per student for Rye Junior High went toward energy costs.

**Figure 4: STOCC Comparison of Building Energy Use**



EPA Portfolio Manager (PM) is an online, interactive tool that allows users to track and analyze energy consumption of a portfolio of buildings over a period of years. It also provides a more detailed analysis of building energy use than STOCC. The seven buildings with the highest energy use are currently entered into PM using the data shown in Table 3. It is a requirement of the Energy Efficiency and Conservation Block Grants (EECBG) awarded to the town of Rye that the buildings receiving grants be tracked using PM.

**Table 3: EPA Portfolio Manager Inventory**

| Building                                                                        | Size (ft <sup>2</sup> ) | Year Built (Additions)  | Portfolio Manager Category          | Fuel Types                             |
|---------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------------------|----------------------------------------|
| Rye Elementary School                                                           | 50,467                  | 1957 (1965, 1996)       | K-12 School                         | electricity, oil, propane* not entered |
| Rye Junior High School                                                          | 52,155                  | 1933 (1949, 1965, 1996) | K-12 School                         | Electricity, oil, propane* not entered |
| Rye Public Library                                                              | 11,097                  | c. 1911 (c. 1998)       | Other - Library                     | Electricity, oil                       |
| Rye Town Hall                                                                   | 5642                    | 1846 (1890, 1980)       | Office                              | Electricity, oil                       |
| Public Safety                                                                   | 19,818                  | 2006                    | Other – Fire Station/Police Station | Electricity, oil                       |
| Public Works                                                                    | 6596                    | 1981                    | Other – service (DPW Garage)        | Electricity, oil                       |
| Recreation Complex (Building, trailer, announcer’s booth, baseball snack shack) | 2452                    | 1989, 1999              | Other - Recreation                  | Electricity, propane                   |

\*Propane usage is not entered in Portfolio Manager due to incomplete records for cost. Usage is 350-450 gal/yr.

While examination of Total Energy Use from Fig. 4 informs us which buildings use the most energy in town, the Energy Intensity, a measure of energy used per square foot, gives an idea of how efficient each building is. Portfolio Manager adjusts the Energy Intensity for weather and compares it to other buildings of the same type. For example, the Library is compared to other libraries, the schools are compared to other K-12 schools, and the Town Hall is compared to other offices. **Site Energy Intensity** is the amount of energy expended to heat, cool, and electrify the floor area of a building - the gallons of oil and the kilowatt-hours of electricity shown on the monthly bills. This measurement fluctuates directly with how much energy is being used, such as how thermostats are set, how much lighting is used, and how well-insulated and sealed the building is. Site Energy Intensity can be lowered through actions such as lowering a thermostat at night or through motion-sensor lighting. **Source Energy Intensity** refers to the amount of energy expended per floor area based on the type of fuel used and the efficiency of that fuel type. It includes the energy required to produce and transport the electricity or fuel. For example, the electricity purchased from the grid is inefficient; the producing facility has to make about 3 kilowatts of electricity in order to deliver 1 kilowatt to the end user. Measures to reduce source energy intensity could include changing the type of fuel used or producing energy onsite from renewable sources, such as solar, wind, geothermal or biomass systems.

PM provides several metrics for comparing building energy consumptions, presented in Table 4, ranked by Total Energy Use.

**Table 4: Building Energy Performance Comparison**

| <b>Building Name</b>   | <b>Total Energy Use (kBtu)</b> | <b>Current Site Energy Intensity (kBtu/ft<sup>2</sup>)</b> | <b>Current Source Energy Intensity (kBtu/ft<sup>2</sup>)</b> | <b>Difference from National Median Source EUI</b> | <b>Annual Energy Cost</b> | <b>Energy Cost/ft<sup>2</sup></b> | <b>Total Greenhouse Gas Emissions (MtCO<sub>2</sub>e)</b> |
|------------------------|--------------------------------|------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------|---------------------------|-----------------------------------|-----------------------------------------------------------|
| Rye Elementary School  | 3,353,040                      | 66                                                         | 111                                                          | -23%                                              | \$85,455                  | \$1.69                            | 282                                                       |
| Rye Junior High School | 3,945,766                      | 73                                                         | 107                                                          | -24%                                              | \$90,747                  | \$1.69                            | 318                                                       |
| Public Safety          | 1,380,876                      | 70                                                         | 130                                                          | -11%                                              | \$37,010                  | \$1.87                            | 120                                                       |
| Rye Public Library     | 710,556                        | 57                                                         | 103                                                          | -58%                                              | \$19,082                  | \$1.58                            | 61                                                        |
| Town Hall              | 401,765                        | 67                                                         | 112                                                          | -13%                                              | \$11,282                  | \$1.87                            | 34                                                        |
| Public Works           | 245,660                        | 37                                                         | 79                                                           | -18%                                              | \$8,762                   | \$1.33                            | 22                                                        |
| Recreation             | 106,180                        | 49                                                         | 70                                                           | -29%                                              | \$3,824                   | \$1.77                            | 8                                                         |

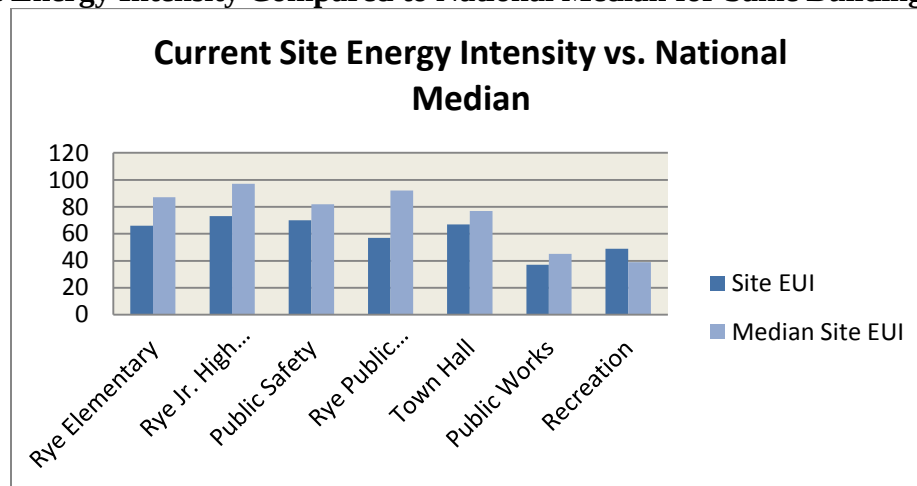
Energy Performance Measurement Definitions:

- Site Energy Intensity – amount of energy expended per square foot to heat, cool, and electrify the building.
- Source Energy Intensity – amount of energy expended per square foot based on the type of fuel used and the efficiency of that fuel type.

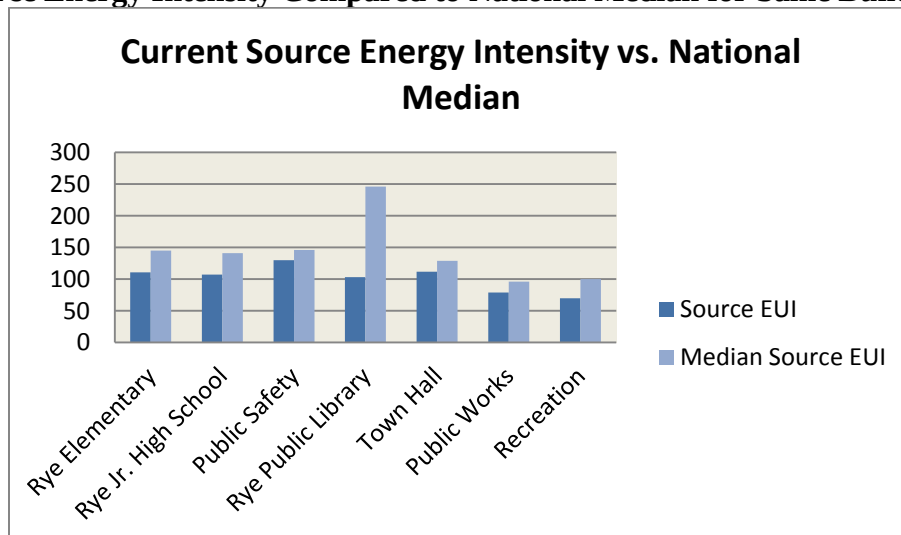
- Difference from National Median Source EUI – difference from the national median source energy intensity for that particular building type, eg. the library is compared to other libraries. Negative values show lower energy intensity than the national median.
- MtCO<sub>2</sub>e – metric tons of carbon dioxide equivalent. This common unit allows emissions of different types of greenhouse gases to be added together.

All of the town buildings shown in Table 4 are performing well compared to the national median source energy intensity for their building type; they all use less energy than the national median. However, the Town Hall and the Public Safety Complex are the least efficient buildings when considering source energy intensity and cost per square foot (see Figs. 5-7). Aside from the schools, which use the most total energy, the Town Hall and the Public Safety Complex should be the next priorities for energy projects due to the fact that they are the least efficient buildings. Because the Public Safety Building also has a high Total Energy Use, it should be targeted first.

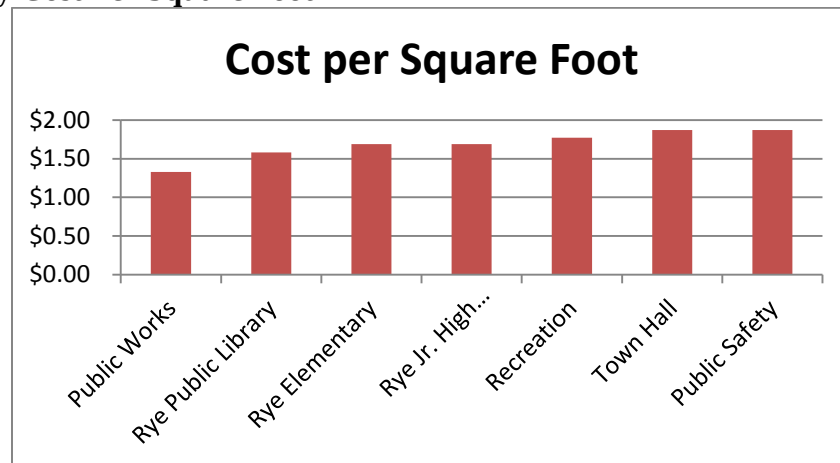
**Fig. 5: Site Energy Intensity Compared to National Median for Same Building Type**



**Fig. 6: Source Energy Intensity Compared to National Median for Same Building Type**



**Fig. 7: Energy Cost Per Square Foot**



These same seven buildings that are tracked in PM have had energy audits done, as shown in Table 5. The audits recommend lighting upgrades and controls, HVAC system upgrades and controls, and building envelope improvements to achieve significant energy usage reductions. These actions are first steps to improve the efficiency of buildings, but the potential savings can be quite high. The next step in energy efficiency would be to install some type of renewable energy onsite, such as solar electric panels, a solar thermal system, a biomass system or a geothermal system. Renewable energy systems have high initial costs, but these costs can sometimes be offset by savings realized through first-step actions such as those recommended in the audits.

**Table 5: Energy Audits Performed on Rye Municipal Buildings**

| Date | Building                                | Audit Level                            | Performed by                                   | Minimum Potential Savings |
|------|-----------------------------------------|----------------------------------------|------------------------------------------------|---------------------------|
| 2008 | Rye Elementary and Rye Jr. High Schools | Comprehensive                          | Jordan Institute, Inc.                         | 55%                       |
| 2009 | Rye Public Library                      | Comprehensive                          | anix – Tim Nichols                             | 61%                       |
| 2009 | Public Works                            | Comprehensive                          | anix – Tim Nichols                             | 28%                       |
| 2009 | Rye Recreation                          | Comprehensive                          | anix – Tim Nichols                             | 16%                       |
| 2009 | Town Hall                               | Comprehensive                          | anix – Tim Nichols                             | 31%                       |
| 2011 | Town Hall (weatherization)              | Level 3 – Detailed Analysis            | Lakes Region Thermal Scan                      | 53% (fuel)                |
| 2011 | Public Safety Complex                   | Decision Grade - Preliminary (Level 1) | Sustainable Development & Energy Systems (SDS) | 30%                       |

Some of the work recommended by the audits has been completed, as shown in Table 6, but the audits detail much more that needs to be done to achieve the savings shown in Table 5. Table 6 shows the energy savings achieved as of December 2011, as calculated by Portfolio Manager. These results are adjusted for weather.

**Table 6: Energy Savings through December 2011 Compared to Baseline Year**

| <b>Building</b>       | <b>Baseline Year</b> | <b>Energy Projects Completed</b>                                                        | <b>Energy Savings from Baseline</b> |
|-----------------------|----------------------|-----------------------------------------------------------------------------------------|-------------------------------------|
| Rye Jr. High          | 2005                 | Ceiling insulation, gym lights, occupancy sensors                                       | 12.1%                               |
| Rye Elementary School | 2005                 | New Boiler and controls, gym lights & occupancy sensors, building envelope improvements | 12.6%                               |
| Rye Public Library    | 2007                 | Lighting, Ceiling Insulation                                                            | 22.2%                               |
| Town Hall             | 2007                 | Lighting, Refrigerator                                                                  | 21.6%                               |
| Public Safety Complex | 2008                 |                                                                                         | 1.0%                                |
| Public Works          | 2009                 | Lighting                                                                                | -21.6%                              |
| Recreation            | 2009                 | Lighting, lowered thermostat, changed furnace filters, behavior – turn off lights       | 23.7%                               |

All of the town buildings, except for Public Works, have realized significant energy savings as a result of the energy projects completed in the past few years. The high Public Works energy usage was due to the temporary use of some infrared heaters in early 2011, which greatly increased electricity use. Public Works Director Dennis McCarthy has disallowed further use of the heaters.

Appendix C contains trend charts for some of the Rye buildings. Scrutiny of these charts can sometimes give insight into areas for energy savings.

### **Financing Building Energy Projects**

Significant energy savings have already been achieved in the municipal buildings, but there is much more that can be realized. When considering efficiency projects, the first call should be made to PSNH, which has several substantial incentive programs for upgrading lighting, HVAC equipment, appliances, and the building envelope. The town may want to investigate working with an Energy Service Company (ESCO) to leverage all financial incentives available for accomplishing efficiency and conservation projects. Two ESCO companies that other smaller NH towns have used are LighTec and Johnson Controls. The REC also has knowledge of incentive programs in the state and would be willing to work with the town to prioritize energy projects and to procure funding.

Several New Hampshire towns have had success using performance contracts, such as a Guaranteed Savings Agreement, allowed according to NH law 21-1:19d. Tax-Exempt Lease-Purchase Agreements are also allowed according to NH law 533 A 2d 37 (NH 1987). Several NH towns have set up revolving funds, in which energy savings from one project are used to fund a future energy project and so on. The town of Hampton Falls will use the savings generated from installing a cogeneration unit and solar hot water system in their Public Safety Building through an EECBG grant to fund their next energy-saving projects.

(<http://www.hamptonfalls.org/energy.htm>).

Potential funding sources are:

- Pay 4 Performance – up to \$300,000, schools and Public Safety only, <http://nhp4p.com/>
- PSNH Programs – up to 50% for energy efficiency and renewable energy projects, also pay-with-your-savings programs, [www.psnh.com](http://www.psnh.com)
- QECBs – Qualified Energy Conservation Bonds, federally subsidized bonds: \$3.1 million available in Rockingham County, [http://www1.eere.energy.gov/wip/pdfs/qecb\\_creb\\_primer.pdf](http://www1.eere.energy.gov/wip/pdfs/qecb_creb_primer.pdf)
- Revolving Loan Funds, such as NH Community Loan Fund, <http://communityloanfund.org/>
- Specialty Lenders – consult NH Business Resource Center
  - Capital Regional Development Council, <http://www.crdc-nh.com/>
  - Community Development Finance Authority, <http://www.nhcdfa.org/>
  - Private companies, eg. Environmental Energy Finance Council (renewable energy), <http://eefcenergy.com/about-us/>
  - Property-Assessed Clean Energy (PACE) Commercial, [http://www1.eere.energy.gov/wip/pdfs/commercial\\_pace\\_primer.pdf](http://www1.eere.energy.gov/wip/pdfs/commercial_pace_primer.pdf)
  - Program Related Investment (PRI) through a foundation such as NH Charitable Foundation, <http://foundationcenter.org/>

Several of these lenders offer 0% interest or very low interest rates for energy projects. In some cases, these sources of funds can be combined, eg. Pay 4 Performance plus PSNH incentives would cover 75%, plus a low-interest loan to cover the balance.

### Operations - Water Pumping

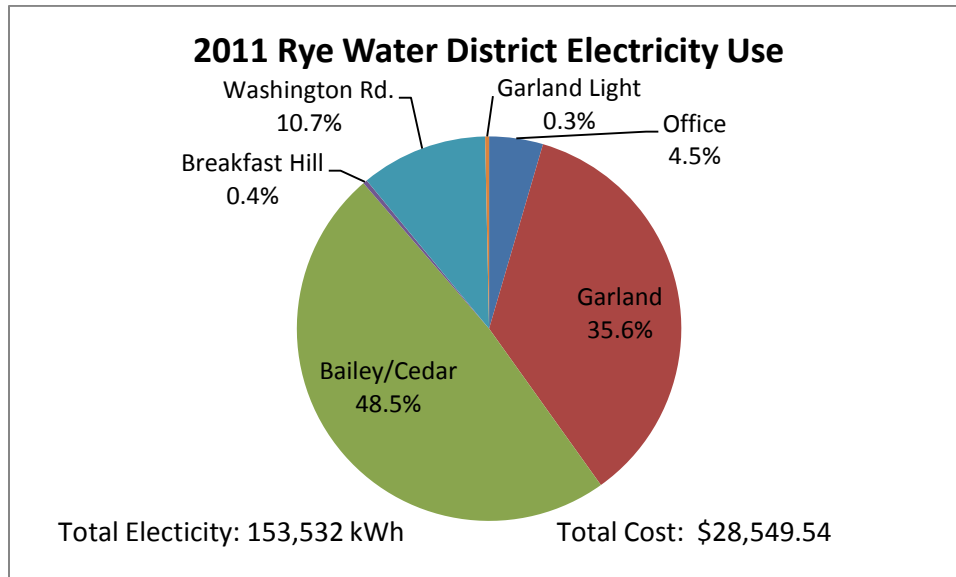
Pumping water is energy intensive. The Water and Sewer Districts used energy in 2011 as shown in Table 7 (Water District gasoline use is detailed in the Vehicles section of this report). Aside from prompt repair of leaks and public education on water conservation measures, recommended ways to save energy when pumping water are using correct pump sizing, variable speed drives, and brushless DC motors. Investigate PSNH and state programs for technical and financial assistance in this area. Propane use by the Water and Sewer Districts can be minimized by improving the insulation and reducing the air leakage of the Water office and Sewer pumphouses.

**Table 7: Rye Water/Sewer Energy Usage**

|                         | Propane | Electricity | CO2 Emissions | Total Annual |
|-------------------------|---------|-------------|---------------|--------------|
| Service                 | (gal.)  | (kWh)       | (lbs)         | Cost         |
| Water District electric |         | 153,532     | 127,117       | \$28,549.54  |
| Water District heat     | 1644    |             | 20,827        | \$4,260.00   |
| Sewer District Pumps    |         | 55,652      | 46,077        | \$8,406.50   |
| Sewer Pumps - heat      | 716     |             | 9,072         | \$2,452.00   |
| TOTALS                  | 2360    | 209,184     | 203,093       | \$43,668.04  |

Water District electricity accounts for the highest energy use in Table 7. Figure 8 shows that nearly 95% of Water District electricity use is for pumping by the Garland Road pumps, the Bailey Brook/Cedar Run pumps, and the Washington Road booster pump.

**Fig. 8: Rye Water Electricity Use**



## Vehicles

The municipal fleet accounts for a significant portion of energy use in town. Figure 9 shows the gasoline and diesel vehicle costs by department. As expected, Public Works and the Police vehicles consume the largest amounts of fuel in town, with the Water District also using a significant amount of gasoline for its trucks.

**Figure 9: 2011 Rye Municipal Vehicles Energy Cost by Department**

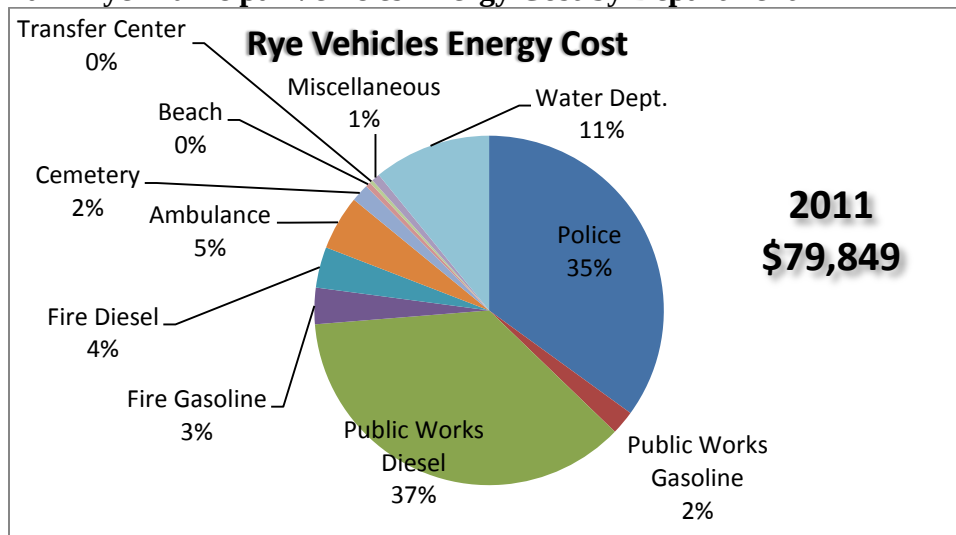


Table 8 details the vehicle fuel usage and cost by department.

**Table 8: 2011 Municipal Vehicle Fuel Use and Cost**

| Department               | Gallons Used | Annual Cost |
|--------------------------|--------------|-------------|
| Police - gas             | 8817         | \$27,940    |
| Public Works - gasoline  | 559          | \$1772      |
| Public Works - diesel    | 8810         | \$29,161    |
| Fire - gasoline          | 847          | \$2685      |
| Fire - diesel            | 911          | \$3015      |
| Ambulance - diesel       | 1219         | \$4037      |
| Cemetery - gas           | 416          | \$1319      |
| Beach - diesel           | 116          | \$383       |
| Transfer Center - diesel | 75           | \$247       |
| Miscellaneous - gas      | 192          | \$609       |
| Water District - gas     | 2956         | \$8681      |
| Total Cost               |              | \$79,849    |

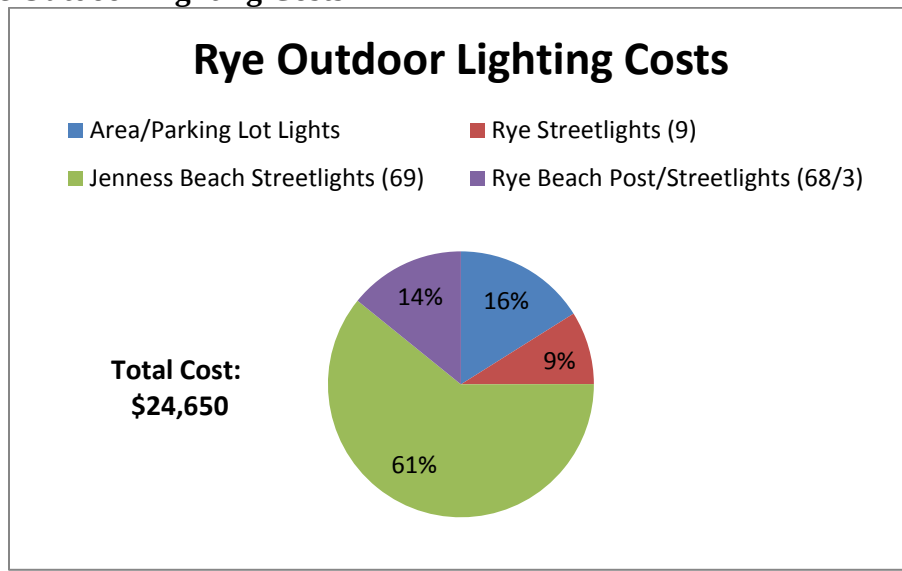
See the Recommendations Section at the end of this report for suggestions on reducing fuel costs for the municipal fleet.

## Streetlights

All Rye outdoor lighting is covered within the Streetlight Category in the STOCC software, including streetlights, post lights, area and parking lot lights, and pedestrian flashers at crosswalks. In 2011 Rye spent \$24,650 on outdoor lighting. While the cost, use, and emissions of outdoor lighting in Rye are far lower than the Buildings and Vehicles sectors, there are financial incentive programs offered through PSNH that will reduce electricity use by at least 30-50%. The towns of North Hampton and Hampton are currently undertaking large streetlight projects, which are expected to result in significant savings for the towns [http://www.northhampton-h.gov/Public\\_Documents/NorthHamptonNH\\_BComm/Energy](http://www.northhampton-h.gov/Public_Documents/NorthHamptonNH_BComm/Energy).

In North Hampton they have determined that streetlights are only required for safety reasons at intersections and curves in the road, but not on straight sections of road. In the main part of Rye there are only 9 streetlights and a few parking lot lights and area lights, but there is a high concentration of lights in the Beach Precincts. In the Jenness Beach Precinct, there are 69 streetlights lining the streets, and in the Rye Beach Precinct there are 68 decorative post lights lining all the streets in addition to three streetlights. Fig. 10 shows the cost distribution for lighting in Rye.

**Fig. 10: Rye Outdoor Lighting Costs**



The Rye Planning Board advocates “Dark Sky”, or fully-shielded, outdoor lighting in the Master Plan. Dark Sky lighting minimizes glare and light pollution by directing light only where it needed – downward. It not only contributes to a more rural character in town and is less disruptive to wildlife, but it helps preserve a view of the night sky. Of course, it also cuts energy waste. Nighttime satellite photos of New Hampshire show the highest concentrations of light along the Route 93 corridor and along the seacoast. Due to the high concentration of lights in the Jenness Beach and Rye Beach Precincts, the residents of these areas may wish to consider switching to more efficient, shielded dark-sky friendly fixtures or eliminating some of the fixtures.

### PSNH Rates for Outdoor Lighting

Most streetlights, parking lot lights, and area lights in Rye are on the PSNH OL All Night rate. The OL rate is analogous to a rental charge for each light, standardized based on the type of lamp and the month of the year, charged whether the light is working or not. PSNH offers the following rates for outdoor lighting, in descending order of cost:

- OL All Night – Outdoor Lighting rate, on all night
- OL Midnight Option– Outdoor Lighting, off at midnight
- EOL All Night – Energy Efficient Outdoor Light, on all night
- EOL Midnight Option – Energy Efficient Outdoor Light, off at midnight

Here is a comparison of these rates per year for the most common type of streetlight in town, a 3500-lumen mercury lamp, with its more efficient counterpart, a 4000-lumen HPS lamp.

| Type    | Lumens | Watts | OL       | OL-Mid   | EOL      | EOL-Mid  |
|---------|--------|-------|----------|----------|----------|----------|
| Mercury | 3500   | 100   | \$207.66 | n/a      | n/a      | n/a      |
| HPS     | 4000   | 50    | \$200.04 | \$185.39 | \$119.28 | \$104.63 |

Neighboring North Hampton, with an annual streetlight bill of approximately \$20,000, has upgraded all of their streetlights to the EOL rate.

See Appendix D for a chart of all PSNH rates, including the Outdoor Lighting rates.

Outdoor lighting is available in the following types, in increasing order of energy efficiency:

- Incandescent
- Mercury
- Metal Halide (white) or High Pressure Sodium (yellow)
- LED

All outdoor lighting in Rye is of the first three types. In order to switch to the lower EOL rate, all streetlights must be Metal Halide or High Pressure Sodium. Next year, the utility expects to also add LEDs to the EOL program. LEDs can last 20 years and use 90% less electricity.

The **Rye Water Precinct** has 11 PSNH accounts for metered lights charged according to Rate G, 1 Phase. These lights are used for area lighting in parks, parking lots, and pedestrian crosswalks on Ocean Boulevard. There is an additional account for nine streetlights on the OL rate. All of these lights are mercury, High Pressure Sodium and Metal Halide. An 11,000 lumen Mercury light at the Town Hall and a 36,000 lumen Metal Halide light on Recreation Road should be upgraded as soon as possible due to their high wattage.

The **Jenness Beach Precinct** has one PSNH account, which charges for 69 streetlights on the OL rate, 57 of which are Mercury lights. Not only are mercury lights now considered hazardous waste, but there are much more efficient lights available. Jenness Beach will profit the most by switching to the EOL rate.

**Rye Beach Village Precinct**, where electric lines are underground, has 8 separate PSNH accounts for separate streets or sections of streets. Seven of these accounts are for the 68 post lights lining particular streets. One account is for standard streetlights on Central Rd. Rye Beach outdoor lights are incandescent and HPS.

The REC recommends that all three precincts pursue the EOL rate for their outdoor lights, with preference for the LED lighting program when available next year.

Interestingly, Jenness Beach is paying far more for its 69 streetlights than Rye Beach is paying for its 68 postlights and 3 streetlights, as shown in Figure 9. Although both precincts have similar numbers of lights lining their streets, but Jenness Beach is paying the OL rate, while Rye Beach's post lights are metered by street.

### **PSNH Accounts**

The Rye municipal sector has 32 electricity accounts, comprising 48 different service areas, with Public Service of New Hampshire. See Appendix E for a complete detailed listing of these accounts. There are two types of PSNH accounts in the municipality. Four are Large Power accounts, whose account numbers start with "800". They are:

- the Rye Elementary School,
- 9 Rye streetlights,
- 69 Jenness Beach streetlights,
- 10 Rye Beach Village outdoor lights.

All other electricity accounts are commercial accounts starting with the numbers “56”. Historical usage data and graphs for these “56” accounts are available online via the PSNH website, [www.psnh.com](http://www.psnh.com). The REC set up an account on this website for the town of Rye so that electricity data would be available to building managers and town administrators. The login information was given to Mike Magnant, Cindy Gillespie, and to the individual building managers.

### PSNH Rate Structures

Most of the town administrators, commissioners, and building managers responsible for paying the electricity bills were not aware of the PSNH rate structure for their accounts. Being aware of how charges are calculated can save money. See Appendix E for a listing of all the PSNH accounts in Rye and the PSNH rate for each and Appendix D for a complete listing of PSNH Rate structures as of January 1, 2012.

Most people understand that at home they are charged a monthly customer charge plus a rate per kilowatt-hour (kwh) of electricity used. However, all municipal buildings or equipment paying according to Commercial Rate G pay an extra charge, called a **demand charge**. The demand charge is based on how much electricity is being used at any one time, and it can double the monthly bill in some cases. Commercial meters check the instantaneous electricity demand in kilowatts (kW) every half hour, and the customer is charged for the maximum recorded for that month above 5 kW at a rate of about \$12 per kW.

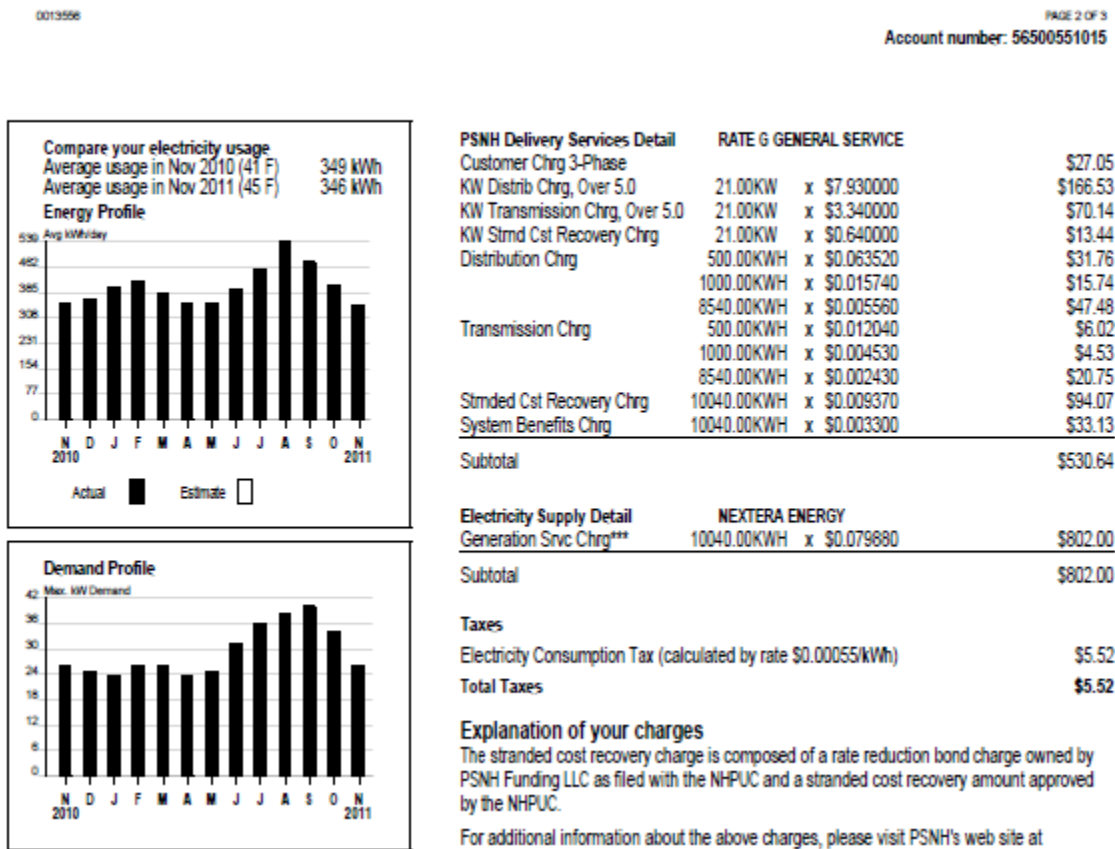
The PSNH rates are adjusted every six months, in June and December of each year. All PSNH accounts paying rate G are charged according the following rate structure:

**Table 9: PSNH Rate G Structure**

| Charge                    | Rate, Jan. 1, 2011 | Rate, Jan. 1, 2012 |
|---------------------------|--------------------|--------------------|
| Customer charge – 1 Phase | \$13.29            | \$13.53            |
| Customer Charge – 3 Phase | \$26.58            | \$27.05            |
| Demand Charge (over 5 KW) | \$12.80 per KW     | \$11.99 per kW     |
| First 500 kWh             | \$0.18069 per kWh  | \$0.17309 per kWh  |
| Next 1,000 kWh            | \$0.12240 per kWh  | \$0.11780 per kWh  |
| All Additional kWh        | \$0.10936 per kWh  | \$0.10552 per kWh  |

For a Rate G-3 Phase example, let us look at a sample portion of a bill for the Public Safety Building, below.

**Figure 11: Sample Portion of PSNH bill for Public Safety Complex**



Notice that the Customer Charge for this November, 2011 bill is \$27.05. The highest demand for this month was 26 KW, so the demand charge is based on 26 minus 5, or 21 KW. Out of a total charge of \$802, the demand charge alone was \$250, or 31% of this particular bill. Notice from the lower bar graph on the left that the demand is highest during the warm months, likely due to air conditioners being on at the same time.

During this month Public Safety used 10,040 kWh of electricity, and they were also charged for this usage according to the sliding scale of first 500 kWh at \$0.173 per kWh, next 1000kWh at \$0.117 per kWh, and the remaining 8540 kWh at \$0.105 per kWh.

### Minimizing Demand Charge

There are three ways to minimize the demand charge each month:

- **Electronic controls**  
Example: Andy Richmond at the Rye Public Library has consulted with his HVAC contractor about staggering the start times of the library's heating and cooling equipment.
- **Behavioral Changes**  
Example: Dennis McCarthy has spoken to the Recycling crew about staggering the running of the compactors.
- **Efficient Equipment**

Example: According to the Energy Audit of the Recreation Building performed by anix in 2009,

*The beverage refrigerator unit in the Baseball Snack Bar (Photograph 90) consumes a substantial amount of electricity with a measured usage of 4.95-amps – this is more than five times an equivalently sized EnergyStar® refrigerator. Annual energy cost to operate this unit is approximately \$600 – the return on investment to replace this with an EnergyStar® unit would be one year.*

Replacement of this refrigerator would not only reduce the demand charge, but also would reduce electricity usage as well.

## Recommendations

### General

- Complete Small Town Carbon Calculator (STOCC) inventory each year.
- Keep EPA Portfolio Manager accounts for buildings up to date. Individual building managers can do this or the REC can enter the data.
- The REC will give an energy update to the town each year using STOCC and Portfolio Manager charts, graphs, and reports. Building managers will be given a Statement of Energy Performance annually.
- Adopt a policy of energy-conscious decision making and encourage residents and businesses to do the same.
- Adopt an Energy Star procurement policy. Energy Star is a joint effort between the U.S. Dept. of Energy and the EPA to help consumers “save money and protect the environment through energy efficient products and practices” ([www.energystar.gov](http://www.energystar.gov)). Energy bills can be substantially reduced through strict use of Energy Star products. Items can be replaced with Energy Star-rated products upon failure. Sometimes it pays to replace a piece of equipment, such as an old refrigerator, before the end of its life. The website lists the energy use by model number of thousands of electrically- and fuel-driven products. A partial listing of items available with the Energy Star rating is shown in the sidebar.

### Buildings

- Complete energy projects as specified by the energy audits. The Public Safety Complex should be top priority due to its lower efficiency and high energy use.
- Work under the NH Pay 4 Performance program for the schools and Public Safety Complex. Combine funds from this program with those from PSNH programs and other sources.

### Energy Star Products

Refrigerators and freezers

Furnaces, boilers, heat pumps

Air conditioners and dehumidifiers

Computers, printers, copiers, scanners

Light fixtures, light bulbs, and ceiling fans

Clothes washers and dishwashers

Windows, doors, and other building products

Televisions, set-top and cable boxes

Audio/visual equipment

Water heaters

Battery chargers

Room air cleaners

Water coolers

Homes

- Investigate sources of funding as specified in Buildings Section of this report.
- Consider having work done under a performance contract, such as a Guaranteed Savings Agreement. Also consider Tax-Exempt Lease-Purchase agreements.
- Consider working with an Energy Service Company that can perform the auditing, oversee the energy projects, guarantee results, and maximize funding sources.
- Use knowledge of PSNH Rate Structure to minimize demand charges.
- Set up a revolving energy savings fund, in which savings are invested in other efficiency or renewable energy projects.
- Once energy-efficiency is maximized, investigate installation of solar photovoltaic systems on south-facing rooftops. Ideal candidates are the Town Hall, Public Safety, and the schools.
- For all major building renovations and new buildings, consider pursuing a nationally-recognized certification of energy efficiency, such as Energy Star, LEED (Leadership in Energy and Environmental Design), Living Building Challenge, or Passive House certifications.

### Vehicles

- Maintain town vehicles. A poorly tuned engine, for example, can increase fuel consumption by 10-20% depending on its condition.
- Keep tires properly inflated and aligned, conduct routine oil changes, and check and replace vehicle air filters. These measures will not only reduce fuel consumption but also will help vehicles to last longer.
- Instruct operators to drive more efficiently. Stay within posted speed limits.
- Avoid unnecessary idling, braking, and acceleration, which can improve fuel economy by 5-10%.
- Combine trips when possible; several short trips taken from a cold start can use twice as much fuel as one trip covering the same distance when the engine is warm.
- Remove excess weight from the vehicle. Carrying an extra 100 pounds reduces fuel economy by 1-2%.
- Develop criteria within the Town's vehicle replacement policy to gradually phase in more fuel efficient or hybrid vehicles.
- Establish an anti-idling policy to encourage municipal fleet users as well as the general public to turn off their engines when the vehicle is not in use. NH state regulations under RSA 125-C:6, XII specify that when temperatures are above 32°F vehicles may not idle for more than 5 minutes. At temperatures between -10°F and 32°F vehicles may not idle for more than 15 minutes. Contact the Nashua Green Team for information about the anti-idling policies they put in place for the city.
- The town of Rye and the Water District may consider aggregating their gasoline and diesel purchases to negotiate a lower price.

### Outdoor Lighting

- Switch to PSNH EOL rate. This will require upgrading mercury and incandescent fixtures to more efficient lamps. Preference should be given to installing LED lamps due to their long life and high efficiency.

- Use efficient and fully shielded “dark sky” fixtures for all outdoor lighting to minimize glare and light pollution, protect wildlife, and cut energy waste.
- The Jenness Beach and the Rye Beach Village Precincts may want to consider reducing the number of streetlights and post lights lining their streets to those required for safety only.
- Use outdoor lighting only where necessary for safety.

#### Water and Sewer Pumping

- Detect and promptly repair leaks
- Use correctly sized pumps.
- Modulate flow rate with variable frequency drives
- Use efficient motors, such as brushless DC motors.
- Educate customers on differences in seasonal flow rates and how to conserve water.

# Appendix A

## Rye Municipal Overview

### Municipal Overview

Town population: 5298, 2010 census, from NH OEP

Population growth since 2000: 2.2%

Area of municipality: 12.6 square miles

Population density: 420.5 persons per sq. mile

Number of municipal buildings:

Rye Water Precinct: 8

Rye Beach Village Precinct: 0.5

Jenness Beach Precinct: 0

Rye School District: 2

Rye Water District: 1

Rye Sewer District: 0

Number of vehicles in fleet: 35

Number of streetlights:

Rye Water Precinct: 17 + 4 flashers

Rye Beach Village: 68 post, 3 street

Jenness Beach Precinct: 69

Rye School District: 1

Rye Water District: 1

Rye Sewer District: 0

Municipal budget in 2011: \$8,870,748

Total municipal energy cost in 2011: \$424,273

Total municipal energy use in 2011: 15,029 MMBtu, or 15 billion Btu

Total municipal CO2 emissions in 2011: 2,711,853 lbs.

### Community Profile

The town of Rye is on the coast in Rockingham County. It is bordered by New Castle, Portsmouth, Greenland, and North Hampton. Rye is the only town in New Hampshire with Atlantic islands, having annexed four of the Isles of Shoals islands. Rye had 5298 residents in 2010, which ranked it 64<sup>th</sup> among New Hampshire's incorporated cities and towns.

Rye has a number of elected Boards and Commissions, including the Board of Selectmen, the Planning Board, Sewer Commission, Zoning (after 2012) and Budget Committee. Other Commissions include Conservation, Heritage, Historic District, Recreation, Sewer, Mosquito, and Beach. Districts include Rye Water District (water operations), Rye Beach Village, and Jenness Beach Village. There are two committees: Rye Energy Committee and the Capital Improvements Program Committee. The town Master Plan was adopted in 2007, amended in 2009, and is currently under revision. The Planning Board is eager to add an Energy Chapter to the Master Plan and is working with the Rye Energy Committee to develop it.

The Rye Energy Committee was formed in 2007. Since its inception the REC has focused its programs and activities on home energy, municipal energy, and local food. Its website is [www.ryeturninggreen.com](http://www.ryeturninggreen.com) and its email newsletter is called Rye Eats Local.

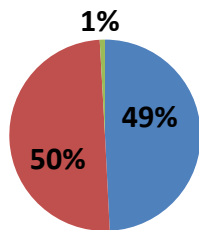
# Appendix B

Small Town Carbon Calculator (STOCC) Results for Selectmen-controlled portion of Rye only.

| 2011 Summary Report        |           |            |          |            |              |            |             |
|----------------------------|-----------|------------|----------|------------|--------------|------------|-------------|
|                            | Buildings |            | Vehicles |            | Streetlights |            |             |
|                            | #         | % of total | #        | % of total | #            | % of total | Grand Total |
| Annual Fuel Expense        | \$86,612  | 53%        | \$71,168 | 43%        | \$6,156      | 4%         | \$163,936   |
| Annual CO2 Emissions (lbs) | 544862.6  | 53%        | 461059   | 45%        | 13976        | 1%         | 1019898     |
| Annual Energy Use (MMBtu)  | 2861.6    | 49%        | 2902.1   | 50%        | 51.4         | 1%         | 5815.2      |

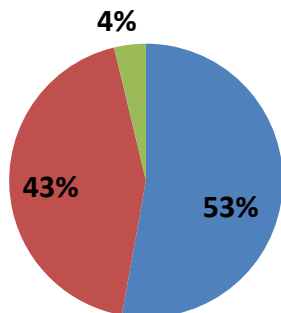
## Annual Energy Use

■ Buildings ■ Vehicles ■ Streetlights



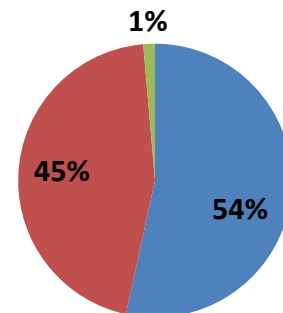
## Annual Fuel Expense

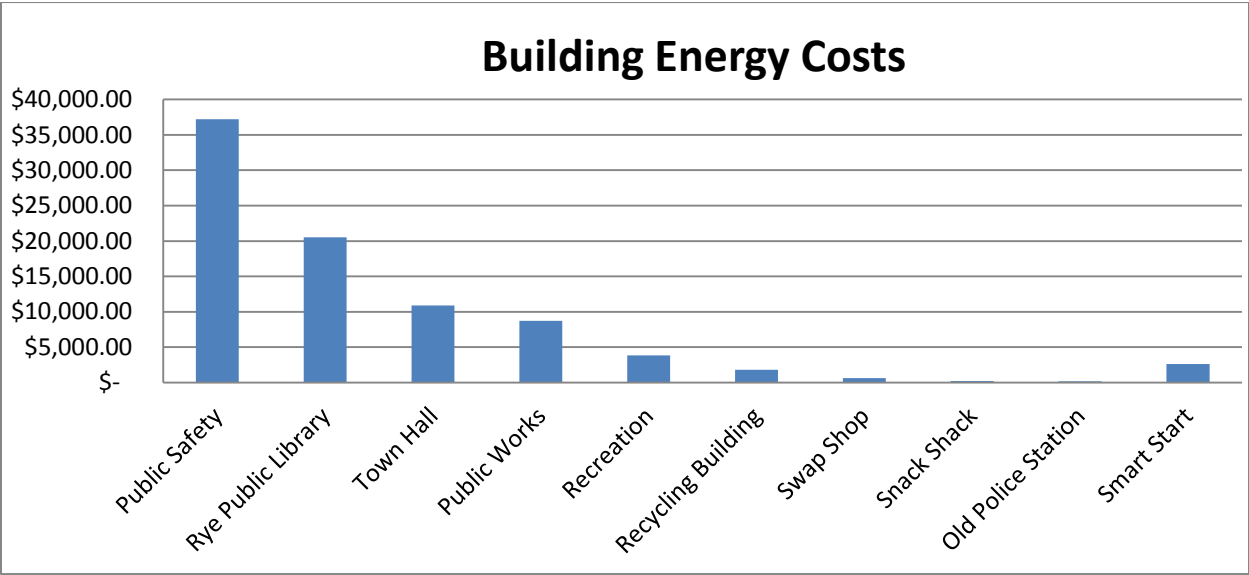
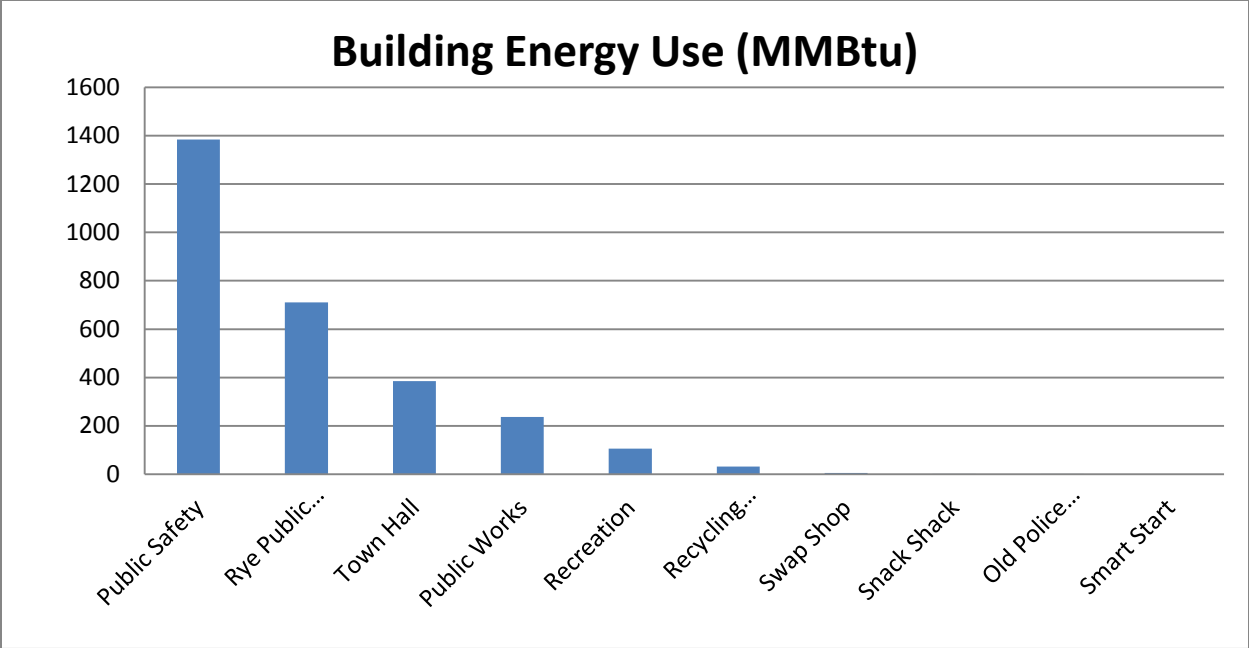
■ Buildings ■ Vehicles ■ Streetlights



## Annual CO2 Emissions

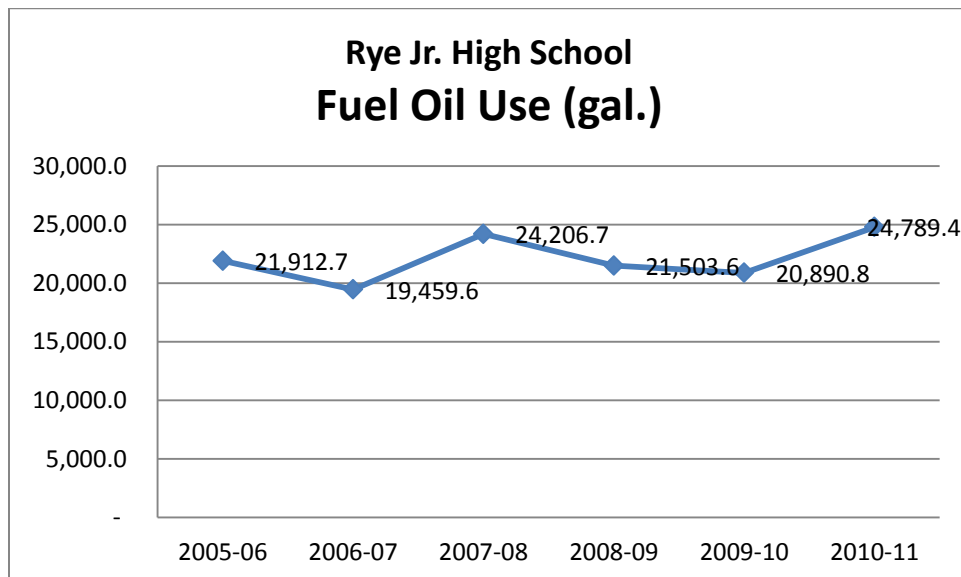
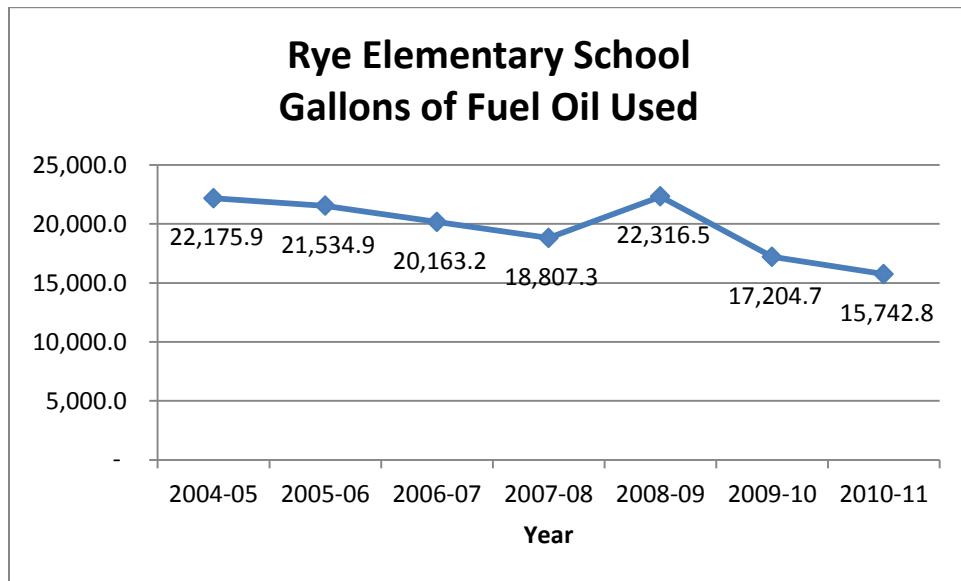
■ Buildings ■ Vehicles ■ Streetlights



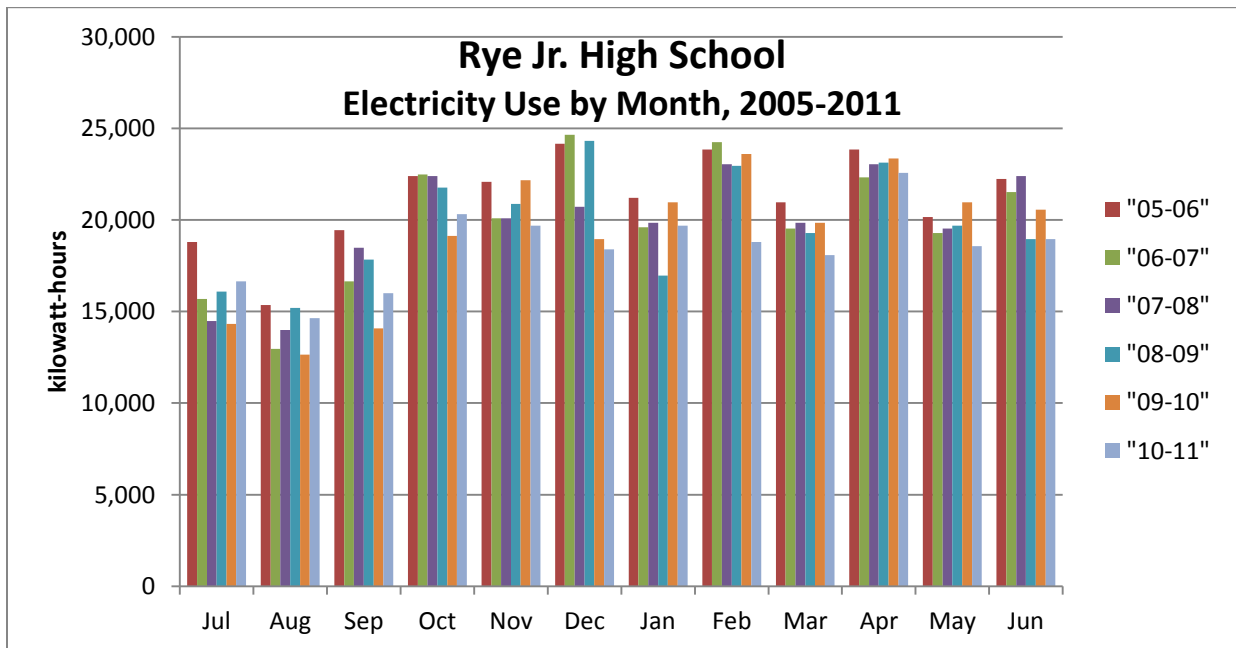
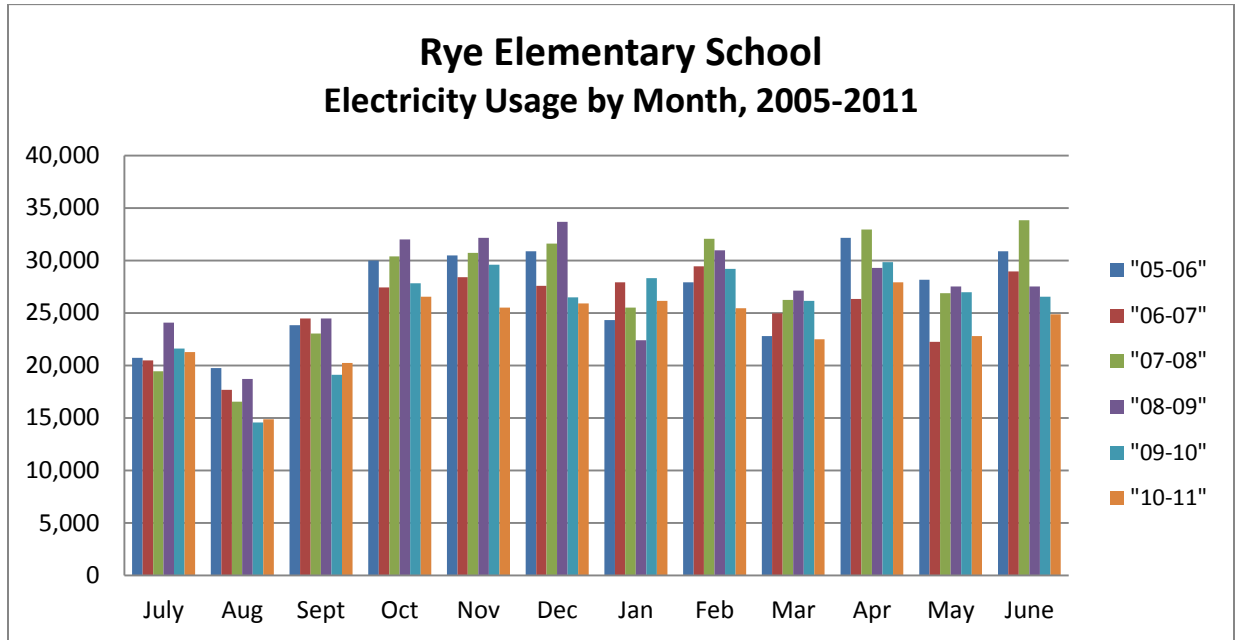


**Appendix C**  
Energy Trend Charts  
For  
Rye Municipal Buildings  
& Operations

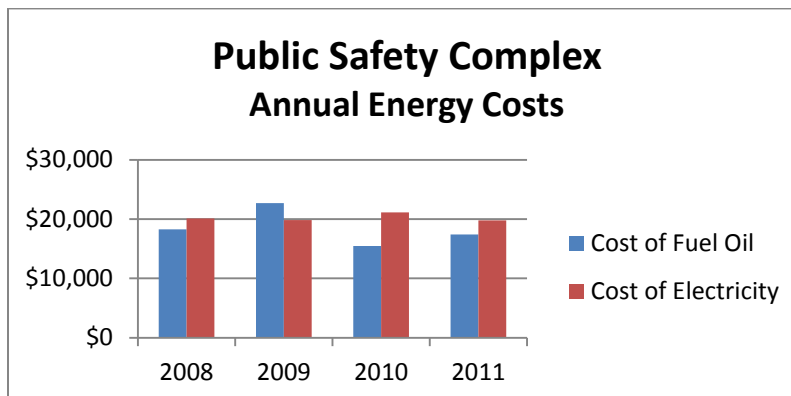
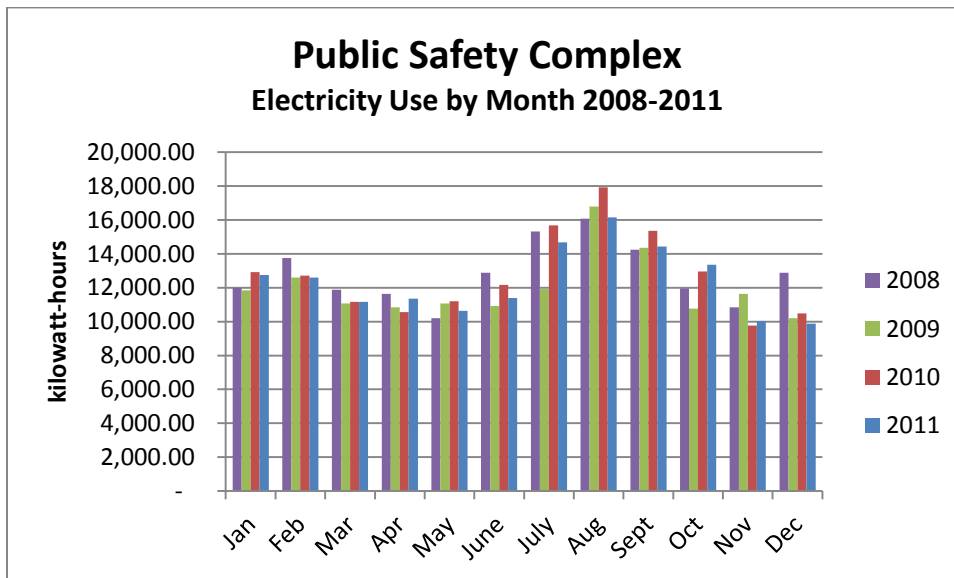
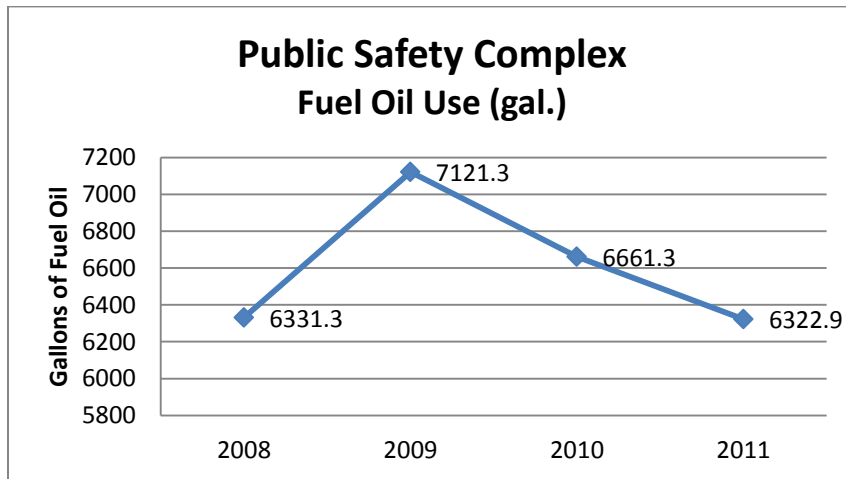
## Rye Schools Annual Fuel Oil Use



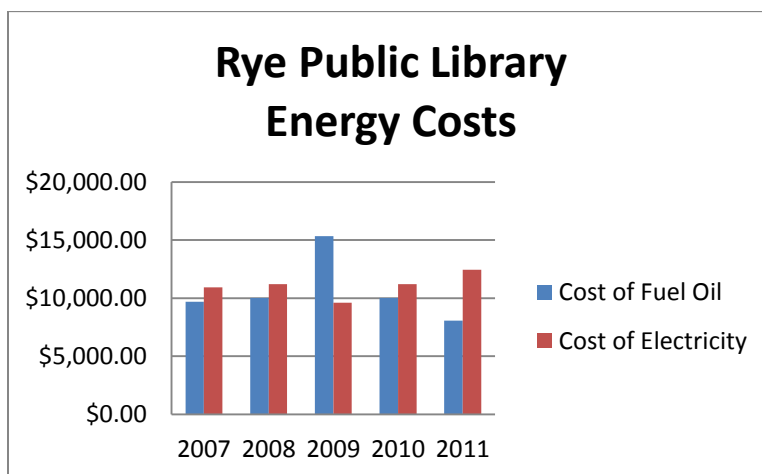
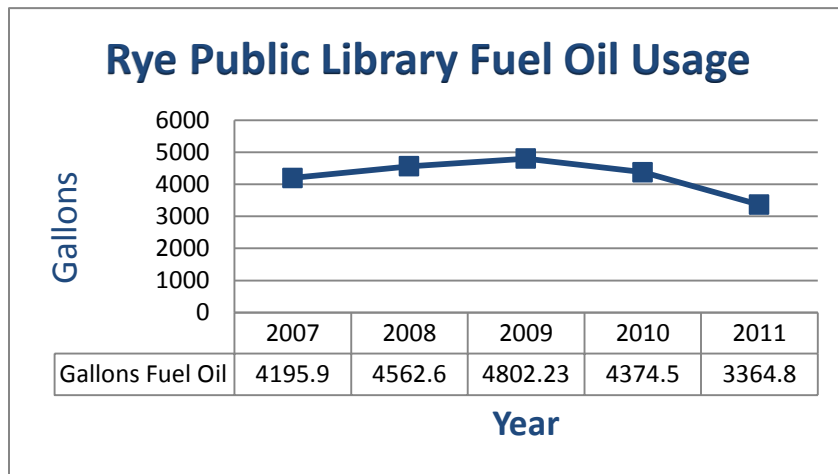
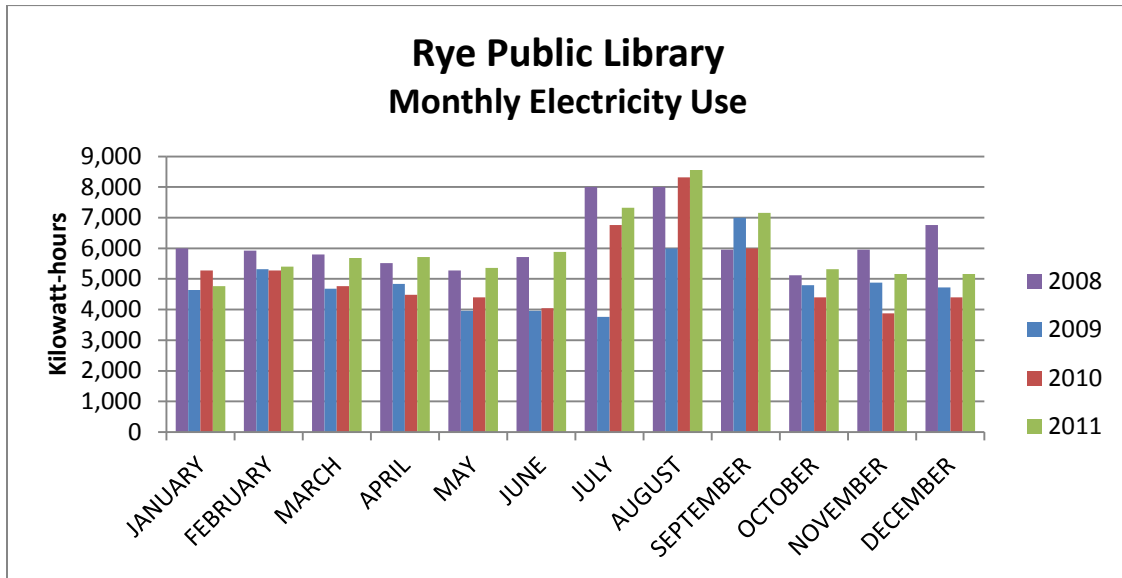
## Rye Schools Electricity Use



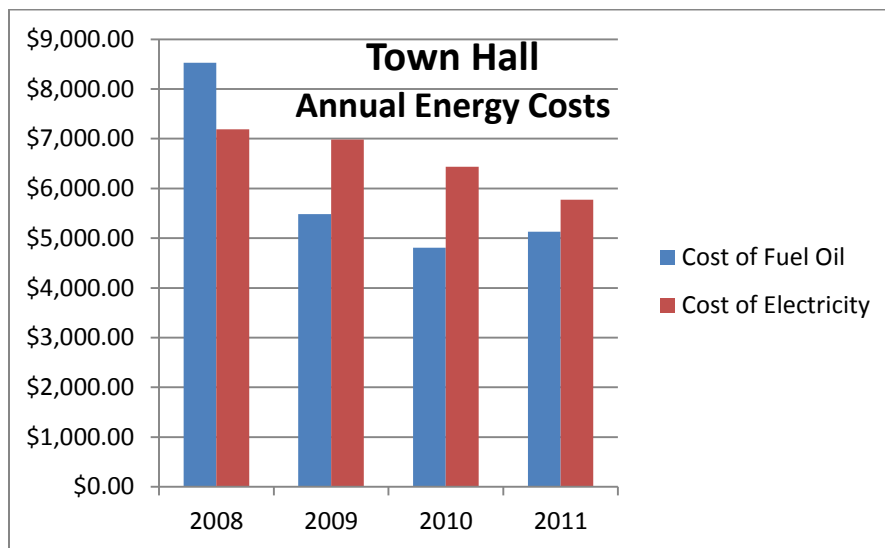
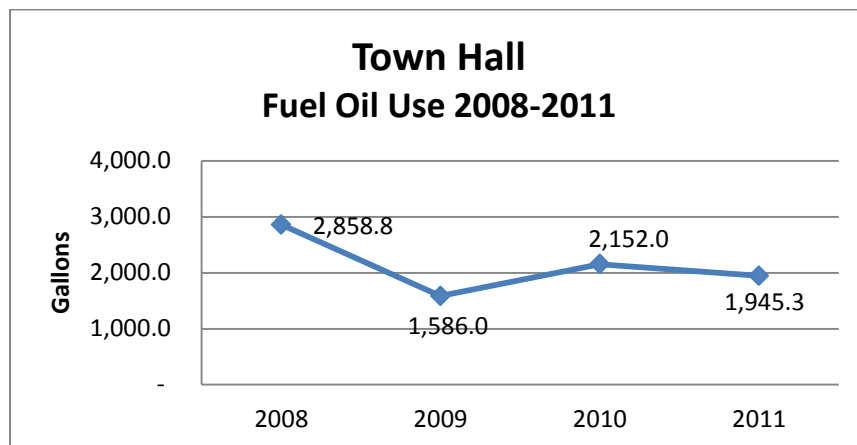
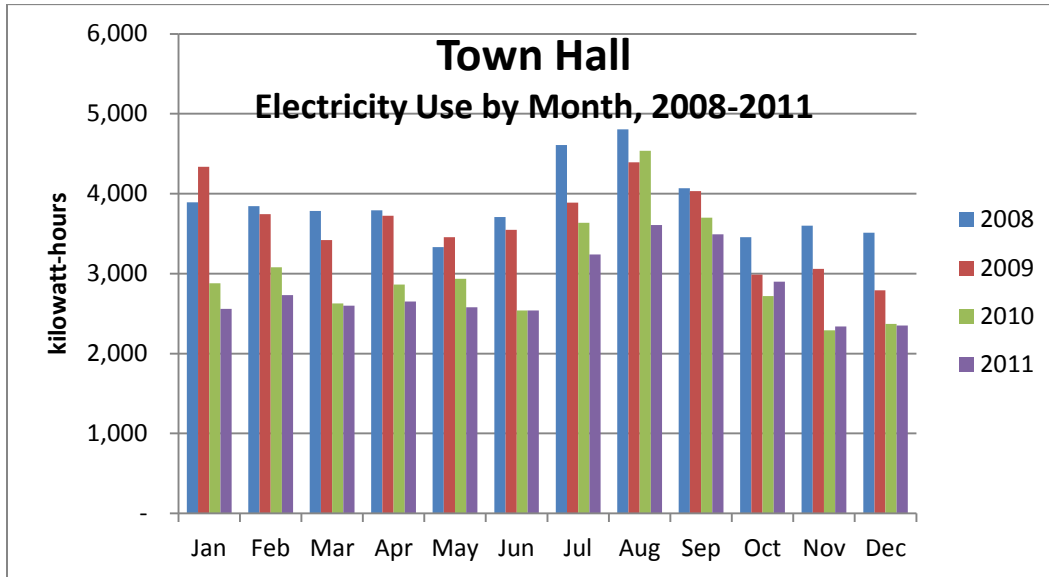
## Public Safety Complex



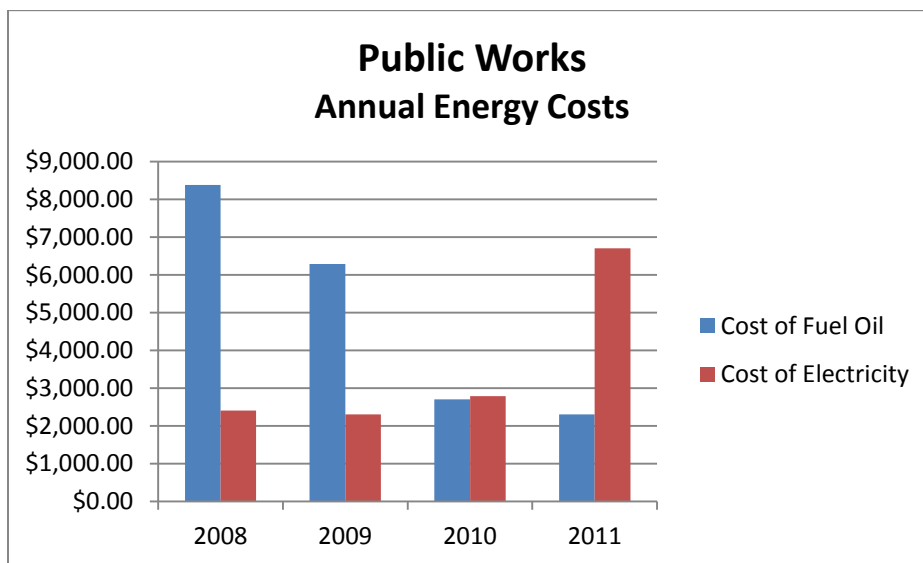
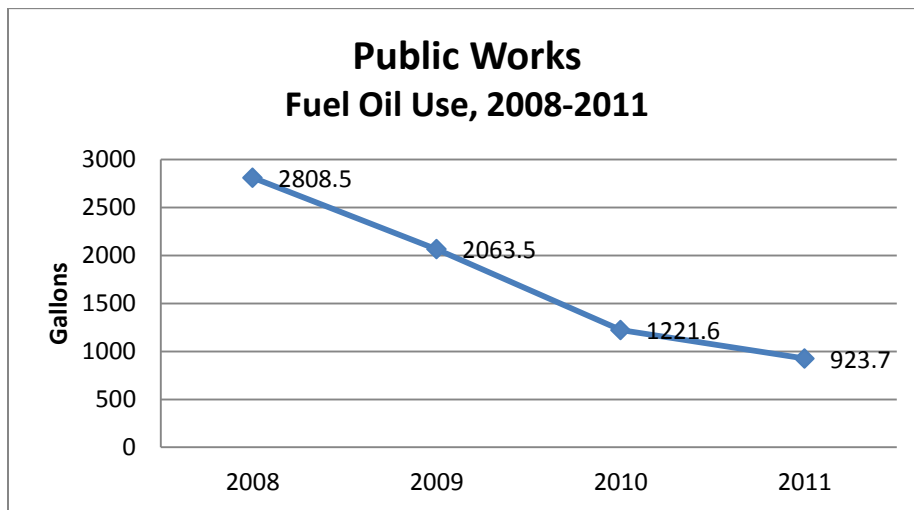
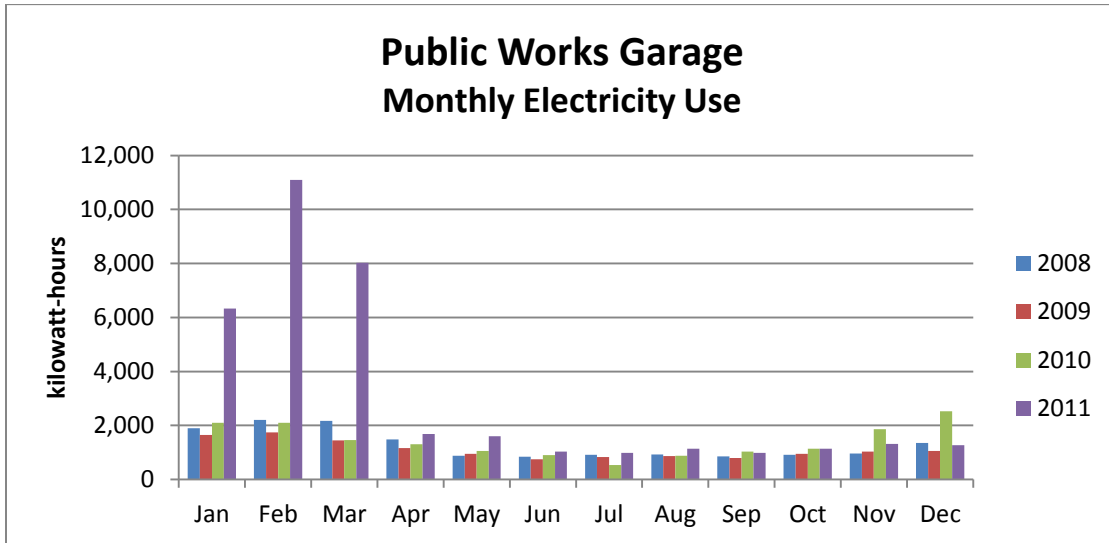
# Rye Public Library



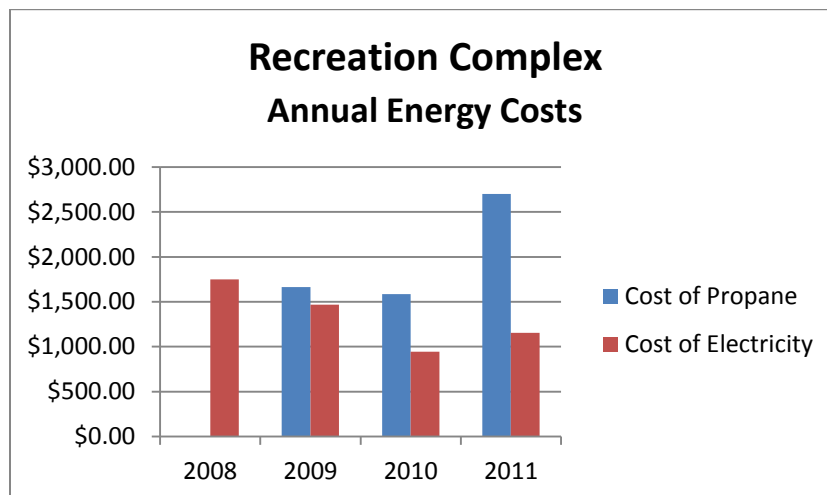
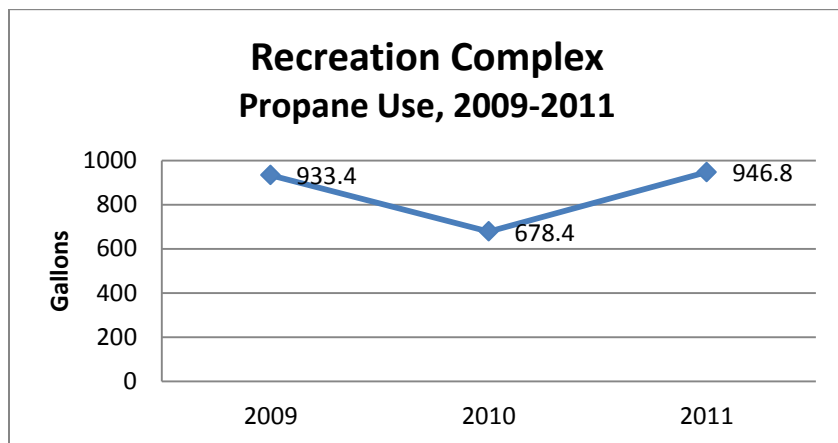
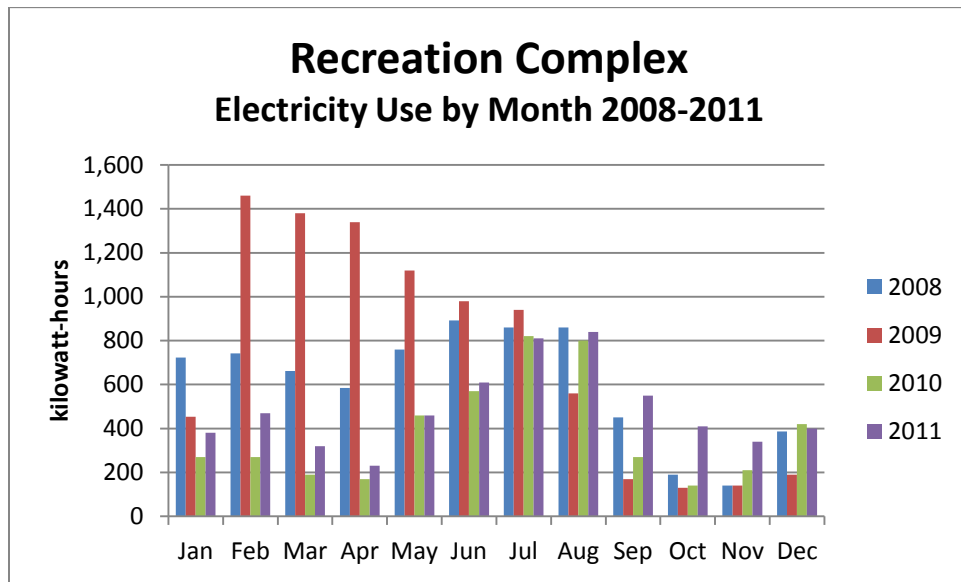
# Rye Town Hall



# Rye Public Works



# Rye Recreation Complex



## **Appendix D**

### **PSNH Rates January 2012**

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**Summary of Rates Effective January 1, 2012**

| Rate                        | Blocks                       | Distribution Charge | Transmission Charge | Stranded Cost Recovery Charge | System Benefits Charge | Electricity Consumption Tax | Total Delivery Service | Energy Service Charge | Total Rate |
|-----------------------------|------------------------------|---------------------|---------------------|-------------------------------|------------------------|-----------------------------|------------------------|-----------------------|------------|
| R                           | Customer charge              | \$ 11.54            |                     |                               |                        |                             | \$ 11.54               |                       | \$ 11.54   |
|                             | All KWH                      | \$ 0.03767          | \$ 0.01293          | \$ 0.01308                    | \$0.00330              | \$ 0.00055                  | \$ 0.06753             | \$0.08310             | \$ 0.15063 |
| Uncontrolled Water Heating* | Meter charge                 | \$ 4.07             |                     |                               |                        |                             | \$ 4.07                |                       | \$ 4.07    |
|                             | All KWH                      | \$ 0.01846          | \$ 0.00999          | \$ 0.01308                    | \$0.00330              | \$ 0.00055                  | \$ 0.04538             | \$0.08310             | \$ 0.12848 |
| Controlled Water Heating*   | Meter charge                 | \$ 7.16             |                     |                               |                        |                             | \$ 7.16                |                       | \$ 7.16    |
|                             | All KWH                      | \$ 0.00109          | \$ 0.00999          | \$ 0.00809                    | \$0.00330              | \$ 0.00055                  | \$ 0.02302             | \$0.08310             | \$ 0.10612 |
| R-OTOD                      | Customer charge              | \$ 26.80            |                     |                               |                        |                             | \$ 26.80               |                       | \$ 26.80   |
|                             | On-peak KWH                  | \$ 0.12036          | \$ 0.01293          | \$ 0.01133                    | \$0.00330              | \$ 0.00055                  | \$ 0.14847             | \$0.08310             | \$ 0.23157 |
|                             | Off-peak KWH                 | \$ 0.00175          | \$ 0.00843          | \$ 0.01133                    | \$0.00330              | \$ 0.00055                  | \$ 0.02536             | \$0.08310             | \$ 0.10846 |
| G                           | Single phase customer charge | \$ 13.53            |                     |                               |                        |                             | \$ 13.53               |                       | \$ 13.53   |
|                             | Three phase customer charge  | \$ 27.05            |                     |                               |                        |                             | \$ 27.05               |                       | \$ 27.05   |
|                             | Load charge (over 5 KW)      | \$ 7.93             | \$ 3.34             | \$ 0.72                       |                        |                             | \$ 11.99               |                       | \$ 11.99   |
|                             | First 500 KWH                | \$ 0.06352          | \$ 0.01204          | \$ 0.01058                    | \$0.00330              | \$ 0.00055                  | \$ 0.08999             | \$0.08310             | \$ 0.17309 |
|                             | Next 1,000 KWH               | \$ 0.01574          | \$ 0.00453          | \$ 0.01058                    | \$0.00330              | \$ 0.00055                  | \$ 0.03470             | \$0.08310             | \$ 0.11780 |
|                             | All additional KWH           | \$ 0.00556          | \$ 0.00243          | \$ 0.01058                    | \$0.00330              | \$ 0.00055                  | \$ 0.02242             | \$0.08310             | \$ 0.10552 |
| Space Heating**             | Meter charge                 | \$ 2.71             |                     |                               |                        |                             | \$ 2.71                |                       | \$ 2.71    |
|                             | All KWH                      | \$ 0.03114          | \$ 0.01204          | \$ 0.01618                    | \$0.00330              | \$ 0.00055                  | \$ 0.06321             | \$0.08310             | \$ 0.14631 |
| G-OTOD                      | Single phase customer charge | \$ 35.07            |                     |                               |                        |                             | \$ 35.07               |                       | \$ 35.07   |
|                             | Three phase customer charge  | \$ 50.10            |                     |                               |                        |                             | \$ 50.10               |                       | \$ 50.10   |
|                             | Load charge                  | \$ 11.05            | \$ 2.20             | \$ 0.28                       |                        |                             | \$ 13.53               |                       | \$ 13.53   |
|                             | On-peak KWH                  | \$ 0.04456          |                     | \$ 0.00843                    | \$0.00330              | \$ 0.00055                  | \$ 0.05684             | \$0.08310             | \$ 0.13994 |
|                             | Off-peak KWH                 | \$ 0.00698          |                     | \$ 0.00843                    | \$0.00330              | \$ 0.00055                  | \$ 0.01926             | \$0.08310             | \$ 0.10236 |
| LCS***                      | Radio-controlled option      | \$ 8.29             |                     |                               |                        |                             | \$ 8.29                |                       | \$ 8.29    |
|                             | 8, 10 or 11-hour option      | \$ 7.16             |                     |                               |                        |                             | \$ 7.16                |                       | \$ 7.16    |
|                             | Switch option                | \$ 8.29             |                     |                               |                        |                             | \$ 8.29                |                       | \$ 8.29    |
|                             | Radio-controlled option      | \$ 0.00109          | \$ 0.00999          | \$ 0.00809                    | \$0.00330              | \$ 0.00055                  | \$ 0.02302             | \$0.08310             | \$ 0.10612 |
|                             | 8-hour option                | \$ 0.00109          | \$ 0.00999          | \$ 0.00809                    | \$0.00330              | \$ 0.00055                  | \$ 0.02302             | \$0.08310             | \$ 0.10612 |
|                             | 10 or 11-hour option         | \$ 0.02225          | \$ 0.00999          | \$ 0.00809                    | \$0.00330              | \$ 0.00055                  | \$ 0.04418             | \$0.08310             | \$ 0.12728 |
|                             |                              |                     |                     |                               |                        |                             |                        |                       |            |

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**Summary of Rates Effective January 1, 2012**  
**Outdoor Lighting Service Rate OL, All-Night Service Option**

|                                                     | Lumens  | Watts | Distribution | Total Monthly Charge, Including Energy Service* |          |          |          |          |          |          |          |           |          |          |          | Total Annual Charge |
|-----------------------------------------------------|---------|-------|--------------|-------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|---------------------|
|                                                     |         |       | Charge       | January                                         | February | March    | April    | May      | June     | July     | August   | September | October  | November | December |                     |
| For new and existing installations                  |         |       |              |                                                 |          |          |          |          |          |          |          |           |          |          |          |                     |
| High Pressure Sodium                                | 4,000   | 50    | \$ 14.39     | \$ 17.31                                        | \$ 16.97 | \$ 16.77 | \$ 16.45 | \$ 16.12 | \$ 16.12 | \$ 16.12 | \$ 16.34 | \$ 16.66  | \$ 16.88 | \$ 16.99 | \$ 17.31 | \$ 200.04           |
|                                                     | 5,800   | 70    | 14.39        | 18.72                                           | 18.20    | 17.85    | 17.53    | 16.99    | 16.88    | 16.99    | 17.31    | 17.75     | 18.18    | 18.39    | 18.72    | 213.51              |
|                                                     | 9,500   | 100   | 19.12        | 25.51                                           | 24.73    | 24.21    | 23.67    | 22.91    | 22.80    | 22.91    | 23.34    | 24.10     | 24.64    | 24.86    | 25.51    | 289.19              |
|                                                     | 16,000  | 150   | 27.04        | 36.57                                           | 35.34    | 34.62    | 33.75    | 32.78    | 32.56    | 32.78    | 33.43    | 34.40     | 35.27    | 35.59    | 36.57    | 413.66              |
|                                                     | 30,000  | 250   | 27.72        | 43.09                                           | 41.18    | 39.95    | 38.65    | 36.92    | 36.60    | 36.92    | 38.00    | 39.63     | 41.03    | 41.57    | 43.09    | 476.63              |
|                                                     | 50,000  | 400   | 28.03        | 51.52                                           | 48.55    | 46.76    | 44.70    | 42.10    | 41.67    | 42.10    | 43.62    | 46.21     | 48.38    | 49.25    | 51.52    | 556.38              |
|                                                     | 130,000 | 1,000 | 44.98        | 100.18                                          | 93.20    | 89.14    | 84.16    | 78.10    | 77.02    | 78.10    | 81.78    | 87.73     | 92.82    | 94.77    | 100.18   | 1,057.18            |
| Metal Halide                                        | 5,000   | 70    | 15.02        | 19.46                                           | 18.94    | 18.59    | 18.16    | 17.73    | 17.62    | 17.73    | 18.05    | 18.48     | 18.92    | 19.02    | 19.46    | 222.16              |
|                                                     | 8,000   | 100   | 20.53        | 26.59                                           | 25.80    | 25.40    | 24.86    | 24.21    | 24.10    | 24.21    | 24.64    | 25.29     | 25.83    | 26.05    | 26.59    | 303.57              |
|                                                     | 13,000  | 150   | 28.18        | 37.71                                           | 36.48    | 35.87    | 35.00    | 33.92    | 33.70    | 33.92    | 34.57    | 35.54     | 36.51    | 36.84    | 37.71    | 427.77              |
|                                                     | 13,500  | 175   | 28.78        | 39.17                                           | 37.86    | 37.11    | 36.14    | 34.95    | 34.84    | 34.95    | 35.71    | 36.79     | 37.76    | 38.20    | 39.17    | 442.65              |
|                                                     | 20,000  | 250   | 28.78        | 43.28                                           | 41.45    | 40.36    | 39.06    | 37.44    | 37.22    | 37.44    | 38.41    | 40.04     | 41.34    | 41.88    | 43.28    | 481.20              |
|                                                     | 36,000  | 400   | 29.04        | 51.66                                           | 48.78    | 47.12    | 45.17    | 42.68    | 42.25    | 42.68    | 44.19    | 46.57     | 48.63    | 49.50    | 51.66    | 560.89              |
|                                                     | 100,000 | 1,000 | 43.52        | 97.86                                           | 90.95    | 87.03    | 82.05    | 76.10    | 75.13    | 76.10    | 79.78    | 85.63     | 90.60    | 92.66    | 97.86    | 1,031.75            |
| For existing installations only                     |         |       |              |                                                 |          |          |          |          |          |          |          |           |          |          |          |                     |
| Incandescent                                        | 600     | 105   | 8.29         | 13.59                                           | 12.89    | 12.51    | 12.08    | 11.43    | 11.32    | 11.43    | 11.86    | 12.40     | 12.84    | 13.05    | 13.59    | 148.99              |
|                                                     | 1,000   | 105   | 9.25         | 14.55                                           | 13.85    | 13.47    | 13.04    | 12.39    | 12.28    | 12.39    | 12.82    | 13.36     | 13.80    | 14.01    | 14.55    | 160.51              |
|                                                     | 2,500   | 205   | 11.86        | 22.14                                           | 20.83    | 20.09    | 19.22    | 18.03    | 17.81    | 18.03    | 18.79    | 19.87     | 20.84    | 21.17    | 22.14    | 238.96              |
|                                                     | 6,000   | 448   | 20.37        | 42.88                                           | 40.11    | 38.45    | 36.39    | 33.90    | 33.47    | 33.90    | 35.42    | 37.80     | 39.96    | 40.72    | 42.88    | 455.88              |
| Mercury                                             | 3,500   | 100   | 12.70        | 18.54                                           | 17.86    | 17.46    | 16.92    | 16.27    | 16.16    | 16.27    | 16.60    | 17.25     | 17.79    | 18.00    | 18.54    | 207.66              |
|                                                     | 7,000   | 175   | 15.26        | 25.54                                           | 24.23    | 23.49    | 22.62    | 21.43    | 21.21    | 21.43    | 22.19    | 23.27     | 24.24    | 24.57    | 25.54    | 279.76              |
|                                                     | 11,000  | 250   | 18.88        | 33.60                                           | 31.66    | 30.68    | 29.27    | 27.65    | 27.43    | 27.65    | 28.73    | 30.25     | 31.65    | 32.19    | 33.60    | 364.36              |
|                                                     | 15,000  | 400   | 21.59        | 44.43                                           | 41.55    | 39.88    | 37.72    | 35.23    | 34.80    | 35.23    | 36.74    | 39.23     | 41.40    | 42.16    | 44.43    | 472.80              |
|                                                     | 20,000  | 400   | 23.30        | 46.14                                           | 43.26    | 41.59    | 39.43    | 36.94    | 36.51    | 36.94    | 38.45    | 40.94     | 43.11    | 43.87    | 46.14    | 493.32              |
|                                                     | 56,000  | 1,000 | 37.04        | 91.48                                           | 84.59    | 80.66    | 75.68    | 69.73    | 68.65    | 69.73    | 73.30    | 79.25     | 84.23    | 86.18    | 91.48    | 954.96              |
| Fluorescent                                         | 20,000  | 330   | 31.59        | 48.15                                           | 46.06    | 44.90    | 43.39    | 41.55    | 41.22    | 41.55    | 42.63    | 44.47     | 45.99    | 46.64    | 48.15    | 534.70              |
| High Pressure Sodium in existing mercury luminaires |         |       |              |                                                 |          |          |          |          |          |          |          |           |          |          |          |                     |
|                                                     | 12,000  | 150   | 19.77        | 28.86                                           | 27.73    | 27.02    | 26.16    | 25.18    | 25.07    | 25.18    | 25.83    | 26.81     | 27.67    | 28.00    | 28.86    | 322.37              |
|                                                     | 34,200  | 360   | 25.30        | 46.08                                           | 43.47    | 41.97    | 40.02    | 37.75    | 37.42    | 37.75    | 39.15    | 41.43     | 43.27    | 44.03    | 46.08    | 498.42              |

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|                               |             |
|-------------------------------|-------------|
| Transmission Charge           | 0.884 ¢/KWH |
| Stranded Cost Recovery Charge | 1.245 ¢/KWH |
| System Benefits Charge        | 0.330 ¢/KWH |
| Electricity Consumption Tax   | 0.055 ¢/KWH |
| Energy Service Charge         | 8.310 ¢/KWH |

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**Summary of Rates Effective January 1, 2012**  
**Energy Efficient Outdoor Lighting Service Rate EOL, All-Night Service Option**

|                      | <u>Lumens</u> | <u>Watts</u> | <u>Distribution Charge</u> | <u>Total Monthly Charge, Including Energy Service*</u> |                 |              |              |            |             |             |               |                  |                |                 |                 | <u>Total Annual Charge</u> |
|----------------------|---------------|--------------|----------------------------|--------------------------------------------------------|-----------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|----------------|-----------------|-----------------|----------------------------|
|                      |               |              |                            | <u>January</u>                                         | <u>February</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>October</u> | <u>November</u> | <u>December</u> |                            |
| High Pressure Sodium | 4,000         | 50           | \$ 7.66                    | \$ 10.58                                               | \$ 10.24        | \$ 10.04     | \$ 9.72      | \$ 9.39    | \$ 9.39     | \$ 9.39     | \$ 9.61       | \$ 9.93          | \$ 10.15       | \$ 10.26        | \$ 10.58        | \$ 119.28                  |
|                      | 5,800         | 70           | 7.66                       | 11.99                                                  | 11.47           | 11.12        | 10.80        | 10.26      | 10.15       | 10.26       | 10.58         | 11.02            | 11.45          | 11.66           | 11.99           | 132.75                     |
|                      | 9,500         | 100          | 9.41                       | 15.80                                                  | 15.02           | 14.50        | 13.96        | 13.20      | 13.09       | 13.20       | 13.63         | 14.39            | 14.93          | 15.15           | 15.80           | 172.67                     |
|                      | 16,000        | 150          | 10.34                      | 19.87                                                  | 18.64           | 17.92        | 17.05        | 16.08      | 15.86       | 16.08       | 16.73         | 17.70            | 18.57          | 18.89           | 19.87           | 213.26                     |
|                      | 30,000        | 250          | 10.34                      | 25.71                                                  | 23.80           | 22.57        | 21.27        | 19.54      | 19.22       | 19.54       | 20.62         | 22.25            | 23.65          | 24.19           | 25.71           | 268.07                     |
|                      | 50,000        | 400          | 10.68                      | 34.17                                                  | 31.20           | 29.41        | 27.35        | 24.75      | 24.32       | 24.75       | 26.27         | 28.86            | 31.03          | 31.90           | 34.17           | 348.18                     |
|                      | 130,000       | 1,000        | 20.26                      | 75.46                                                  | 68.48           | 64.42        | 59.44        | 53.38      | 52.30       | 53.38       | 57.06         | 63.01            | 68.10          | 70.05           | 75.46           | 760.54                     |
| Metal Halide         | 5,000         | 70           | 7.95                       | 12.39                                                  | 11.87           | 11.52        | 11.09        | 10.66      | 10.55       | 10.66       | 10.98         | 11.41            | 11.85          | 11.95           | 12.39           | 137.32                     |
|                      | 8,000         | 100          | 10.50                      | 16.56                                                  | 15.77           | 15.37        | 14.83        | 14.18      | 14.07       | 14.18       | 14.61         | 15.26            | 15.80          | 16.02           | 16.56           | 183.21                     |
|                      | 13,000        | 150          | 11.21                      | 20.74                                                  | 19.51           | 18.90        | 18.03        | 16.95      | 16.73       | 16.95       | 17.60         | 18.57            | 19.54          | 19.87           | 20.74           | 224.13                     |
|                      | 13,500        | 175          | 11.82                      | 22.21                                                  | 20.90           | 20.15        | 19.18        | 17.99      | 17.88       | 17.99       | 18.75         | 19.83            | 20.80          | 21.24           | 22.21           | 239.13                     |
|                      | 20,000        | 250          | 12.00                      | 26.50                                                  | 24.67           | 23.58        | 22.28        | 20.66      | 20.44       | 20.66       | 21.63         | 23.26            | 24.56          | 25.10           | 26.50           | 279.84                     |
|                      | 36,000        | 400          | 12.35                      | 34.97                                                  | 32.09           | 30.43        | 28.48        | 25.99      | 25.56       | 25.99       | 27.50         | 29.88            | 31.94          | 32.81           | 34.97           | 360.61                     |
|                      | 100,000       | 1,000        | 22.00                      | 76.34                                                  | 69.43           | 65.51        | 60.53        | 54.58      | 53.61       | 54.58       | 58.26         | 64.11            | 69.08          | 71.14           | 76.34           | 773.51                     |

\* Rates shown here are equal to the fixed monthly distribution charge, plus the monthly KWH multiplied by the sum of the Transmission Charge, the Stranded Cost Recovery Charge, the System Benefits Charge, the Electricity Consumption Tax, and the Energy Service Charge. These amounts may vary slightly from actual bill calculations due to intermediate rounding of individual rate components on bills. The monthly charges for February reflect a 3.6% increase in KWH usage in accordance with the "Leap Year Adjustment to Energy" provision of the tariff.

|                               |             |
|-------------------------------|-------------|
| Transmission Charge           | 0.884 ¢/KWH |
| Stranded Cost Recovery Charge | 1.245 ¢/KWH |
| System Benefits Charge        | 0.330 ¢/KWH |
| Electricity Consumption Tax   | 0.055 ¢/KWH |
| Energy Service Charge         | 8.310 ¢/KWH |

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**Summary of Rates Effective January 1, 2012**  
**Outdoor Lighting Service Rate OL, Midnight Service Option**

|                      | <u>Lumens</u> | <u>Watts</u> | <u>Distribution Charge</u> | <u>Total Monthly Charge, Including Energy Service*</u> |                 |              |              |            |             |             |               |                  |                |                 |                 | <u>Total Annual Charge</u> |
|----------------------|---------------|--------------|----------------------------|--------------------------------------------------------|-----------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|----------------|-----------------|-----------------|----------------------------|
|                      |               |              |                            | <u>January</u>                                         | <u>February</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>October</u> | <u>November</u> | <u>December</u> |                            |
| High Pressure Sodium | 4,000         | 50           | \$ 14.39                   | \$ 15.91                                               | \$ 15.62        | \$ 15.36     | \$ 15.47     | \$ 15.15   | \$ 15.04    | \$ 15.04    | \$ 15.15      | \$ 15.36         | \$ 15.58       | \$ 15.80        | \$ 15.91        | \$ 185.39                  |
|                      | 5,800         | 70           | 14.39                      | 16.55                                                  | 16.18           | 15.80        | 16.01        | 15.58      | 15.36       | 15.36       | 15.58         | 15.80            | 16.12          | 16.55           | 16.66           | 191.55                     |
|                      | 9,500         | 100          | 19.12                      | 22.37                                                  | 21.70           | 21.28        | 21.39        | 20.85      | 20.53       | 20.64       | 20.85         | 21.18            | 21.72          | 22.15           | 22.48           | 257.14                     |
|                      | 16,000        | 150          | 27.04                      | 31.80                                                  | 30.85           | 30.18        | 30.40        | 29.64      | 29.20       | 29.31       | 29.64         | 30.07            | 30.83          | 31.59           | 32.13           | 365.64                     |
|                      | 30,000        | 250          | 27.72                      | 35.41                                                  | 34.00           | 32.81        | 33.24        | 31.83      | 31.18       | 31.29       | 31.83         | 32.70            | 33.89          | 35.19           | 35.95           | 399.32                     |
|                      | 50,000        | 400          | 28.03                      | 39.83                                                  | 37.56           | 35.82        | 36.36        | 34.31      | 33.33       | 33.55       | 34.31         | 35.61            | 37.45          | 39.40           | 40.59           | 438.12                     |
|                      | 130,000       | 1,000        | 44.98                      | 72.58                                                  | 67.41           | 63.38        | 64.57        | 59.70      | 57.43       | 57.86       | 59.70         | 62.84            | 67.06          | 71.61           | 74.42           | 778.56                     |
| Metal Halide         | 5,000         | 70           | 15.02                      | 17.18                                                  | 16.81           | 16.54        | 16.64        | 16.21      | 15.99       | 16.10       | 16.21         | 16.43            | 16.86          | 17.18           | 17.40           | 199.55                     |
|                      | 8,000         | 100          | 20.53                      | 23.56                                                  | 23.00           | 22.59        | 22.69        | 22.15      | 21.94       | 21.94       | 22.15         | 22.48            | 23.02          | 23.45           | 23.78           | 272.75                     |
|                      | 13,000        | 150          | 28.18                      | 32.94                                                  | 31.99           | 31.43        | 31.54        | 30.78      | 30.34       | 30.45       | 30.78         | 31.21            | 32.08          | 32.83           | 33.27           | 379.64                     |
|                      | 13,500        | 175          | 28.78                      | 33.98                                                  | 33.04           | 32.24        | 32.46        | 31.49      | 31.16       | 31.16       | 31.59         | 32.14            | 32.89          | 33.87           | 34.30           | 390.32                     |
|                      | 20,000        | 250          | 28.78                      | 36.03                                                  | 34.61           | 33.65        | 33.98        | 32.68      | 32.03       | 32.14       | 32.68         | 33.43            | 34.62          | 35.82           | 36.47           | 408.14                     |
|                      | 36,000        | 400          | 29.04                      | 40.30                                                  | 38.24           | 36.62        | 37.05        | 35.10      | 34.13       | 34.34       | 35.10         | 36.40            | 38.13          | 39.97           | 41.05           | 446.43                     |
|                      | 100,000       | 1,000        | 43.52                      | 70.69                                                  | 65.50           | 61.60        | 62.79        | 58.02      | 55.86       | 56.18       | 58.02         | 61.05            | 65.28          | 69.82           | 72.53           | 757.34                     |

\* Rates shown here are equal to the fixed monthly distribution charge, plus the monthly KWH multiplied by the sum of the Transmission Charge, the Stranded Cost Recovery Charge, the System Benefits Charge, the Electricity Consumption Tax, and the Energy Service Charge. These amounts may vary slightly from actual bill calculations due to intermediate rounding of individual rate components on bills. The monthly charges for February reflect a 3.6% increase in KWH usage in accordance with the "Leap Year Adjustment to Energy" provision of the tariff.

|                               |             |
|-------------------------------|-------------|
| Transmission Charge           | 0.884 ¢/KWH |
| Stranded Cost Recovery Charge | 1.245 ¢/KWH |
| System Benefits Charge        | 0.330 ¢/KWH |
| Electricity Consumption Tax   | 0.055 ¢/KWH |
| Energy Service Charge         | 8.310 ¢/KWH |

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**Summary of Rates Effective January 1, 2012**  
**Energy Efficient Outdoor Lighting Service Rate EOL, Midnight Service Option**

|                      | <u>Lumens</u> | <u>Watts</u> | <u>Distribution Charge</u> | <u>Total Monthly Charge, Including Energy Service*</u> |                 |              |              |            |             |             |               |                  |                |                 |                 | <u>Total Annual Charge</u> |
|----------------------|---------------|--------------|----------------------------|--------------------------------------------------------|-----------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|----------------|-----------------|-----------------|----------------------------|
|                      |               |              |                            | <u>January</u>                                         | <u>February</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>October</u> | <u>November</u> | <u>December</u> |                            |
| High Pressure Sodium | 4,000         | 50           | \$ 7.66                    | \$ 9.18                                                | \$ 8.89         | \$ 8.63      | \$ 8.74      | \$ 8.42    | \$ 8.31     | \$ 8.31     | \$ 8.42       | \$ 8.63          | \$ 8.85        | \$ 9.07         | \$ 9.18         | \$ 104.63                  |
|                      | 5,800         | 70           | 7.66                       | 9.82                                                   | 9.45            | 9.07         | 9.28         | 8.85       | 8.63        | 8.63        | 8.85          | 9.07             | 9.39           | 9.82            | 9.93            | 110.79                     |
|                      | 9,500         | 100          | 9.41                       | 12.66                                                  | 11.99           | 11.57        | 11.68        | 11.14      | 10.82       | 10.93       | 11.14         | 11.47            | 12.01          | 12.44           | 12.77           | 140.62                     |
|                      | 16,000        | 150          | 10.34                      | 15.10                                                  | 14.15           | 13.48        | 13.70        | 12.94      | 12.50       | 12.61       | 12.94         | 13.37            | 14.13          | 14.89           | 15.43           | 165.24                     |
|                      | 30,000        | 250          | 10.34                      | 18.03                                                  | 16.62           | 15.43        | 15.86        | 14.45      | 13.80       | 13.91       | 14.45         | 15.32            | 16.51          | 17.81           | 18.57           | 190.76                     |
|                      | 50,000        | 400          | 10.68                      | 22.48                                                  | 20.21           | 18.47        | 19.01        | 16.96      | 15.98       | 16.20       | 16.96         | 18.26            | 20.10          | 22.05           | 23.24           | 229.92                     |
|                      | 130,000       | 1,000        | 20.26                      | 47.86                                                  | 42.69           | 38.66        | 39.85        | 34.98      | 32.71       | 33.14       | 34.98         | 38.12            | 42.34          | 46.89           | 49.70           | 481.92                     |
| Metal Halide         | 5,000         | 70           | 7.95                       | 10.11                                                  | 9.74            | 9.47         | 9.57         | 9.14       | 8.92        | 9.03        | 9.14          | 9.36             | 9.79           | 10.11           | 10.33           | 114.71                     |
|                      | 8,000         | 100          | 10.50                      | 13.53                                                  | 12.97           | 12.56        | 12.66        | 12.12      | 11.91       | 11.91       | 12.12         | 12.45            | 12.99          | 13.42           | 13.75           | 152.39                     |
|                      | 13,000        | 150          | 11.21                      | 15.97                                                  | 15.02           | 14.46        | 14.57        | 13.81      | 13.37       | 13.48       | 13.81         | 14.24            | 15.11          | 15.86           | 16.30           | 176.00                     |
|                      | 13,500        | 175          | 11.82                      | 17.02                                                  | 16.08           | 15.28        | 15.50        | 14.53      | 14.20       | 14.20       | 14.63         | 15.18            | 15.93          | 16.91           | 17.34           | 186.80                     |
|                      | 20,000        | 250          | 12.00                      | 19.25                                                  | 17.83           | 16.87        | 17.20        | 15.90      | 15.25       | 15.36       | 15.90         | 16.65            | 17.84          | 19.04           | 19.69           | 206.78                     |
|                      | 36,000        | 400          | 12.35                      | 23.61                                                  | 21.55           | 19.93        | 20.36        | 18.41      | 17.44       | 17.65       | 18.41         | 19.71            | 21.44          | 23.28           | 24.36           | 246.15                     |
|                      | 100,000       | 1,000        | 22.00                      | 49.17                                                  | 43.98           | 40.08        | 41.27        | 36.50      | 34.34       | 34.66       | 36.50         | 39.53            | 43.76          | 48.30           | 51.01           | 499.10                     |

\* Rates shown here are equal to the fixed monthly distribution charge, plus the monthly KWH multiplied by the sum of the Transmission Charge, the Stranded Cost Recovery Charge, the System Benefits Charge, the Electricity Consumption Tax, and the Energy Service Charge. These amounts may vary slightly from actual bill calculations due to intermediate rounding of individual rate components on bills. The monthly charges for February reflect a 3.6% increase in KWH usage in accordance with the "Leap Year Adjustment to Energy" provision of the tariff.

|                               |       |       |
|-------------------------------|-------|-------|
| Transmission Charge           | 0.884 | ¢/KWH |
| Stranded Cost Recovery Charge | 1.245 | ¢/KWH |
| System Benefits Charge        | 0.330 | ¢/KWH |
| Electricity Consumption Tax   | 0.055 | ¢/KWH |
| Energy Service Charge         | 8.310 | ¢/KWH |

**APPENDIX E**  
**PSNH Accounts for Rye**

| PSNH           | PSNH         | Meter     |               |                |                 |                 | Pole      |                | Rye            | 2011        |
|----------------|--------------|-----------|---------------|----------------|-----------------|-----------------|-----------|----------------|----------------|-------------|
| Acct. No.      | Service Ref. | Number    | Dept.         | Address        | Location        | Use             | Number    | Rate           | Account        | Charges     |
| 56172141012    | 780560000    | W01868180 | Town Hall     | 10 Central Rd. | Building        | meter           |           | G - 3 Phase    | 01-4194-07-480 | \$5,775.33  |
| 56172141012    | 276560006    |           | Town Hall     | 10 Central Rd. | Parking Lot     | Outside Light   | 5/3A      | OL 5800L HPS   | 01-4194-07-480 | \$212.91    |
| 56172141012    | 324560005    |           | Town Hall     | 10 Central Rd. | Parking Lot     | Area Light      | 5/3A1/2   | OL 3500L Merc. | 01-4194-07-480 | \$206.64    |
| 56172141012    | 944170007    | G23765209 | Public Works  | 309 Grove Rd.  | Garage          | meter           |           | G - 3 Phase    | 01-4194-06-480 | \$6,701.79  |
| 56098641061    | 963901002    | D80788226 | Transfer Sta  | 309 Grove Rd.  | Swap Shop       | meter           |           | G - 3 Phase    | 01-4323-33-480 | \$614.27    |
| 56172141012    | 439070009    | S38163422 | Transfer Sta  | 309 Grove Rd.  | Recycl. Bldg.   | meter           |           | G - 3 Phase    | 01-4323-33-480 | \$1,810.57  |
| 56500551015    | 105711006    | S38493839 | Public Safety | Wash. Rd.      | Police/Fire     | meter           |           | G - 3 Phase    | 01-4194-08-480 | \$19,777.09 |
| 56172141012    | 966280007    | S34691875 | Recreation    | S34691875      | Rec Building    | meter           |           | G - 1 Phase    | 01-4520-50-480 | \$1,153.24  |
| 56544341027    | 906601008    | G15825284 | Recreation    | G15825284      | Snack Shack     | meter           |           | G - 1 Phase    | 01-4520-50-480 | \$215.63    |
| 56172141012    | 717280005    |           | Recreation    | Recreation Rd. | Road            | 2 Area Lites    | 74/4,74/5 | OL 3500L Merc. | 01-4520-50-480 | \$556.61    |
| 56172141012    | 487280006    |           | Recreation    | Recreation Rd. | Parking Lot     | Area Light      | 74/6      | OL 13500L MH   | 01-4520-50-480 | \$411.01    |
| 56172141012    | 076280007    |           | Recreation    | Recreation Rd. | Parking Lot     | Area Light      | 74/7      | OL 36000L MH   | 01-4520-50-480 | \$556.51    |
| 56588831008    | 621301009    | W01868237 | Sewer         | 25 Church Rd.  |                 | Pump Station    |           | G - 3 Phase    | 02-4326-90-480 | \$5,382.95  |
| 56779731017    | 885201008    | G23577025 | Sewer         | Ocean Blvd.    | Jenness         | Pump Station    |           | G - 3 Phase    | 02-4326-90-480 | \$3,004.76  |
| 56735731085    | 738201006    | W78561850 | Sewer         | Central Rd.    | Abenaki         | Pump Station    |           | G - 3 Phase    | 02-4326-90-480 | \$661.34    |
| 8001076-01-2-4 |              |           | Street Lights | see below      | see below       | 9 Street Lights |           | see below      | 01-4316-27-480 | \$2,192.84  |
|                |              |           |               | Wash. Rd       | at Wayside Lane |                 | 2/82      | OL 3500L Merc  |                |             |
|                |              |           |               | Wash. Rd       | at Central Rd.  |                 | 2/87      | OL 7000L Merc  |                |             |
|                |              |           |               | Wash. Rd       | at Congo Church |                 | 2/91      | OL 3500L Merc  |                |             |
|                |              |           |               | Wash. Rd       | Opp. Old Parish |                 | 2/94      | OL 3500L Merc  |                |             |
|                |              |           |               | Wash. Rd       |                 |                 | 2/97      | OL 3500L Merc  |                |             |
|                |              |           |               | Wash. Rd       | Opp. Lang Rd.   |                 | 2/100     | OL 3500L Merc  |                |             |
|                |              |           |               | Wash. Rd       | at TD Bank      |                 | 2/103     | OL 4000L HPS   |                |             |
|                |              |           |               | Wallis Rd.     | at Wash. Rd.    | Grange Park     | 43/127    | OL 3500L Merc  |                |             |
|                |              |           |               | Wentworth Rd.  | at bridge       |                 | 13/53A1   | OL 30,000L HPS |                |             |
| 56220141089    | 717401000    |           | Street Lights | 10 Central Rd. | Town Hall       | 2 Area Lites    | 5/3A1/Y   | OL 11000 Merc. | 01-4194-27-480 |             |
| not used       | 489501003    | D24095246 |               | 37 Central Rd. |                 | sign            |           |                | 01-4316-27-480 |             |

| PSNH           | PSNH         | Meter                         |                |                |                   |                   | Pole     |                 | Rye            | 2011        |
|----------------|--------------|-------------------------------|----------------|----------------|-------------------|-------------------|----------|-----------------|----------------|-------------|
| Acct. No.      | Service Ref. | Number                        | Dept.          | Address        | Location          | Use               | Number   | Rate            | Account        | Charges     |
| 56172141012    | 809460009    | D94313720                     | Street Lights  | 37 Central Rd. | Old Police Bldg.  | meter             |          | G - 1 Phase     | 01-4316-27-480 | \$163.18    |
| 56798421061    | 729801000    | G82445488                     | Street Lights  | Ocean Blvd.    | at Wallis (N)     | Ped. Flasher      | 7/208A   | G - 1 Phase     | 01-4316-27-480 | \$179.54    |
| 56798421061    | 565901003    | G77198282                     | Street Lights  | Ocean Blvd.    | at Wallis (S)     | Ped. Flasher      | 7/206    | G - 1 Phase     | 01-4316-27-480 | \$187.59    |
| 56119005015    | 192303005    | D99464426                     | Street Lights  | Ocean Blvd.    | at Perkins (S)    | Ped. Flasher      | 7/34/A   | G - 1 Phase     | 01-4316-27-480 | \$177.62    |
| 56692641004    | 404901005    | G77198559                     | Street Lights  | Ocean Blvd.    | at Perkins (N)    | Ped. Flasher      | 7/37/4JT | G - 1 Phase     | 01-4316-27-480 | \$184.02    |
| 56798421061    | 146401009    | S23698183                     | Area Light     | Wallis Rd.     | Grange Park       |                   |          | G - 1 Phase     | 01-4316-27-480 | \$180.74    |
| 56798421061    | 145390002    | D22560426                     | Area Light     | Wash. Rd       | Parsons Field     |                   |          | G - 1 Phase     | 01-4316-27-480 | \$179.54    |
| 56172141012    | 939413004    | Town Hall, 10 Central Rd.     |                |                |                   | Energy Efficiency | Lighting | SSP Smart Start | 01-4316-27-480 | \$1,150.00  |
| 56172141012    | 117513006    | Rec Area, Recreation Rd.      |                |                |                   | Energy Efficiency | Lighting | SSP Smart Start | 01-4316-27-480 | \$440.00    |
| 56172141012    | 253513005    | Highway Garage, 309 Grove Rd. |                |                |                   | Energy Efficiency | Lighting | SSP Smart Start | 01-4316-27-480 | \$720.00    |
| 56172141012    | 323513000    | Swap Shop, 309 Grove Rd.      |                |                |                   | Energy Efficiency | Lighting | SSP Smart Start | 01-4316-27-480 | \$305.00    |
|                |              |                               |                |                |                   |                   |          |                 |                |             |
| 56531731040    | 524201001    | S66227598                     | Public Library | 581 Wash. Rd.  | building          | meter             |          | G - 3 Phase     |                | \$12,454.21 |
|                |              |                               | Public Library | 581 Wash. Rd.  | Energy Efficiency | Lighting          |          | SSP Smart Start |                | \$862.44    |
| 8005121-02-9-4 |              |                               | Elem. School   | 461 Sagamore   | building          | meter             |          | G - 3 Phase     |                | \$41,515.00 |
| 5613314036     | 990701009    | S36498323                     | Middle Sch.    | 501 Wash. Rd.  | building          | meter             |          | G - 3 Phase     |                | \$33,120.90 |
|                | 738601004    |                               | Middle Sch.    | 501 Wash. Rd.  | area light        |                   |          | OL 3500L Merc.  | \$210.66       | included    |
| 56799311030    | 314480001    | G46461028                     | Water          | 60 Sagamore    | office bldg.      | meter             |          | G - 3 Phase     |                | \$1,514.86  |
| 56996290078    | 219460009    | W01868141                     | Water          | Garland Rd.    | pump station      | meter             |          | G - 3 Phase     |                | \$9,519.58  |
|                | 867460002    |                               | Water          | Garland Rd.    | area light        |                   |          | OL 3500L Merc.  | \$210.66       | included    |
| 56928290055    | 586560006    | D74779790                     | Water          | BailBrk/Cedar  | pump station      | meter             |          | G - 3 Phase     |                | \$13,340.96 |
| 56470341041    | 379501002    | G99215318                     | Water          | Breakfast Hill | tank              | meter             |          | G - 1 Phase     |                | \$258.54    |
| 56461341000    | 038601001    | S54098062                     | Water          | Wash. Rd.      | booster pump      | meter             |          | G - 3 Phase     |                | \$3,705.30  |
| 56153311055    | 161480006    | G82313378                     | Rye Beach      | Sea Road       | post lights       | meter             |          | G - 1 Phase     |                | \$277.61    |
| 56086980091    | 160260002    | G46581991                     | Rye Beach      | Central Rd.    | post lights       | meter             |          | G - 1 Phase     |                | \$329.81    |
| 56944931021    | 970301002    | G42707384                     | Rye Beach      | Central Rd.    | post lights       | meter             |          | G - 1 Phase     |                | \$325.89    |
| 56296201031    | 636370002    | W58743026                     | Rye Beach      | Central Rd.    | post lights       | meter             |          | G - 1 Phase     |                | \$235.21    |
| 56223141037    | 777401008    | G93925120                     | Rye Beach      | Central Rd.    | post lights       | meter             |          | G - 1 Phase     |                | \$202.60    |
| 56788980050    | 826260001    | G31768584                     | Rye Beach      | 828 Central Rd | building          | meter             |          | G - 1 Phase     |                | \$314.45    |
| 56205541006    | 225801007    | G93213438                     | Rye Beach      | South Rd.      | post lights       | meter             |          | G - 1 Phase     |                | \$321.21    |
| 56807201017    | 99370008     | G90605373                     | Rye Beach      | Church Rd.     | post lights       | meter             |          | G - 1 Phase     |                | \$214.66    |
| 8001074-01-6-7 |              |                               | Rye Beach      | Central Rd.    | streetlights      |                   | various  | OL - various    |                | \$1,587.85  |
| 8001075-01-4-1 |              |                               | Jenness Bch    | district       | 69 street lights  |                   | various  | OL - various    |                | \$15,000.00 |

